The Builder.

No. CCXXVII.

SATURDAY, JUNE 12, 1847.

EVERY one has heard of St. Stephen's, Walbrook. Foreigners and provincialists know it as one of the best of Wren's many works, and Londoners, who never find time to look at any thing close to them, as the site of long continued parochial strife and disputes. It is of one of the results of these distressing and discreditable squabbles, that we would speak to-day.

St. Stephen's, Walbrook, is one of the architural boasts of London. Hear what Ralph says: "It is famous all over Europe, and justly reputed the master-piece of Sir Christopher Wren. Perhaps Italy itself can produce no modern building that can vie with this in taste or proportion: there is not a beauty which the plan would admit of, that is not to be found here in its greatest perfection; and foreigners very justly call our judgment in question for understanding its graces no better, and allowing it no higher a degree of fame." A modern writer, whose opinion is worth more than Ralph's, clinches this by saying,—"Compared with any other of nearly the same magnitude, Italy cannot exhibit its equal; elsewhere its rival is not to be found. Of those worthy notice, the Zitelle, at Venice (by Palladio), is the nearest approximation in regard to size, but it ranks far below our church in point of composition, and still lower in point of effect." And then again,—"Had its materials and volume been as durable and extensive as those of St. Paul's Cathedral, Sir Christopher Wren had consummated a much more efficient monument to his well-earned fame, than that fabric affords."*

Without going to the full extent of these encomiums, we claim for it the admiration of all who can appreciate harmonious proportions, ingenious arrangement, and great constructive skill; and would have it most religiously preserved and worthily adorned.

This being the case, the sorrow with which we heard of the melancholy state of dilapidation into which the church had been allowed to fall, may be supposed,—the regret with which we heard a statement on the subject made by the rector, the Rev. Dr. Croly, to the open vestry of this unfortunate parish.

"As to the melancholy state of the parish church," said the reverend gentleman, "you require no knowledge from me. Like the often-quoted inscription on the grave of Wren, 'If you desire to see his monument, look round you:' if you desire to see the result of the parish difficulties, you have only to look at the stained roof and broken-up floor, at the shaking casements and beggared furniture of a church which was once the pride of our city, and built expressly to remain as a memorial of the genius of one of the noblest architectural names of England. It is now four years since I said in your vestry, that this church was 'not fit for divine service.' I now say that it is less fit, if possible, than before. It is true, that it has not yet fallen upon the congregation; it is true, that the question is not yet decided, whether the floor is to burst up or the roof to come down. Fortunately, the fabric was the work of better times; for if it had been one of our modern performances, the problem would have been solved long since by its ruins. I repeat that, though the church may stand, it is still not the fitter for its sacred purpose. In the city our church is called the 'Walbrook ice-house.' It has been proposed, when the congregation shall all have been frozen away, to make it a colossal barometer, from its indicating every vicissitude of the elements with the most immediate sensibility. By others, the idea of a rain gauge, on the largest possible scale, has been suggested, from its letting down every shower through its cupola. I have seen people thus involuntarily irrigated within a few feet of the pulpit. It was but two Sundays ago, when fires were forbidden us, that the *planking*, which is the novel substitute for glass in one of our east windows, was taken down, I know not by whom, and the frosty air rushed in in a gale. Gentlemen, I say that this is a scandalous state for any sacred edifice to be left in, and that it is a scandal to the city and to the establishment—nay, to the country."

Since this we have sought for an opportunity to visit the structure and judge for ourselves, and last Sunday succeeded in doing so. We travelled to the Mansion House, where, as a rhymer on "Modern Castles" says,—

> "Behind proud Dance's palace, in disgrace,
> Retiring Walbrook hides her blushing face,"

and after listening to an eloquent and instructive discourse from the rector, looked round the church.

We found the statement already quoted was in no respect over-coloured; and we echo the assertion that the state of this church is a scandal to the city, and to the establishment,—nay, to the country. The glass is broken, the walls are filthily dirty, and the cupola and ceilings stained and injured, by the entry of water for several years past through the lead which covers them, leading to the belief that much of the timber-work will be found rotten when properly examined.

The prevention of further evil through this cause, and the restitution of the parts already injured, are the first steps that should be taken, and ought not to be delayed a week longer than can be avoided. The rest of the fabric should then be generally repaired, and decorated in a style worthy of the building. If the parish cannot do it, London ought, and if London will not, it is the duty of all England to assist. St. Stephen's, Walbrook, belongs to the nation.

We have been asked by several persons to say in what manner this building should be decorated, but think it would be scarcely right to do so now. If it belonged to our neighbours, the French, the columns would be polished, the walls would be covered with paintings in fresco or encaustic, the cupola and ceilings would glow with colours and gilding, varied marbles would form the pavement, and the windows be filled with stained glass. It would be one of the glories of the capital, and an added inducement to strangers of all nations to resort there.

In moderation, the same course should be adopted here, and the corporation of London, and the legislature, might be fairly called upon to aid by a grant so good an object.

It has been suggested by some who frequent the church, that the ugly oval lights (of which there are a dozen) in the walls of the church, should be closed, the light being at times so great as to distract the eye, and that the recesses should be made to receive busts of the apostles. The introduction of painted glass would, perhaps, be preferable, as it would remedy the evil complained of without endangering the effect of the structure. The pewing should also be re-arranged; but, as we said before, we will not now enter into details: our present object is to draw attention to the miserable state of the building, and to claim for it immediate reparation, and ultimately, worthy adornment.*

* Gwilt in Britton's "Public Buildings of London."

* A beautiful engraving of the interior of the church will be found in "Godwin's Churches of London."

THE BUILDINGS ACT AMENDMENT BILL.

BUILDERS, district surveyors, and the public, have alike felt it necessary to object to portions of the Bill now before the House, and of which we recently gave an abstract.† Committees appointed by the District Surveyors Association, the Builders' Society, and the Society of Master Carpenters, have reported on it and transmitted their views to the Commissioners of Woods. A deputation of the two latter bodies, consisting of Mr. William Cubitt, Mr. Grimsdell, and Mr. Thomas Piper (of the Builders' Society), and Mr. H. Biers, and Mr. J. Stephens (of the Carpenters'), had an interview with Lord Morpeth on the subject last week. The deputation was introduced by Colonel Wood, who seems to be the only metropolitan member that has taken much interest in the matter. Mr. Hawes, the present under secretary for the colonies, was of course precluded by his official position from any interference, but on the former occasion, when the first bill was introduced, he gave the matter most patient consideration, and watched the measure through the House with much though unsuccessful vigilance. The deputation were received with the greatest attention, and their various suggestions were discussed and considered at length. Mr. Philips, at Lord Morpeth's desire, was present, and the interview lasted one hour-and-a-half. The points chiefly insisted upon were:—1st. The new authority proposed by clause VII., to be vested in district surveyors, and which in ordinary buildings it was felt would be in the highest degree objectionable,‡ and, 2ndly, that the awards of the official referees should be subject to appeal.§

Mr. H. Biers called the attention of his lordship to an award by the official referees, which, if insisted upon, would be a great hardship upon almost every dwelling of every rate, but most especially to the smaller description of buildings. He read from THE BUILDER a report of this award, in which the official referees stated, that all additional buildings attached to the back front of any dwelling, if *above* the basement story, must not have any internal communication, although in the same occupation; in point of fact, that to make use of an office building on or above the GROUND FLOOR, you must first go into the back-yard of your own premises, otherwise, if there is to be an internal communication from the staircase or back parlour, that then this addition must be measured as to area, and included in the area of the main building. This would so diminish the area of the respective rates, that the new bill would very considerably curtail the superficial area limiting the rates: so that instead of having had an increase in superficial quantity in the present bill, as compared with the old Buildings Act, it would much diminish even the limited area under its provisions, and defeat the object of the legislature and of every one who had at all promoted a larger space in the respective rates. The award would also deprive the public of the boon they considered they had obtained, in the walls of the additional buildings being of a thickness *pro rata* with the attached building ITSELF, and unconnected as regards thickness of walls with the main building.

His lordship gave the deputation to understand, that this was not to be considered a

† See p. 237.

‡ "This clause as it stands," say the Builders' Society, "has a twofold aspect; one to remove special supervision, and one to give to district surveyors greatly increased powers, and much larger responsibility; because, with respect to the buildings subject to special supervision, as well as those subject to ordinary supervision, the district surveyor is to have regard not only to the provisions of this Act, but generally to the 'stability and efficiency of the structure,' a new and most objectionable power. Any such authority should be limited to special supervision only."

§ "Clauses XII. and XIII.—Give to the award of the official referees powers that will carry everything before it; making it put aside all the existing authorities of the land, and supersede the courts of law—and this without appeal; giving power to destroy and remove deficient buildings, sell the materials, and if the proceeds of that sale do not meet the expenses, giving a charge on the land itself for all the arrears.

This clause gives more power than ought to be in any tribunal, and there certainly should be some appeal. The certificate or award will of course find its legal value in due time in the various courts of law and equity, and it seems unreasonable that this great power should be given to it by Act of Parliament."

final measure; but that the whole subject was to undergo discussion and revision, and the present bills superseded, as soon as could be, by one comprehensive and more simple measure.

With this understanding, and with the several alterations suggested incorporated, the deputation stated their desire that the amendments should pass into law.

The report of the Builders' Society summed up as follows:—

"The *general objects* of this additional bill appear to be to increase the authority of the official referees, permitting them, according to their discretion, to set aside the Act altogether, extending their powers, giving them summary and final jurisdiction, and conferring legal and unimpeachable value on their awards; removing from them the trouble and responsibility of special supervision, and bringing under the authority of the Acts such portions of great public works (railroads, docks, &c.), previously exempted, as abut upon public ways, and empowering the recovery of all fees, &c. by the most summary process.

An attempt is made by clause 7 to give to the district surveyors an authority which would be in the highest degree objectionable, by imposing on them the duty of examining into "the general stability and efficiency" of all structures; a power of interference in all respects to be deprecated by the public, while on the district surveyors themselves it would devolve an amount of responsibility by no means enviable.

It is to be regretted that the same disposition to minute legislation still continues, and that this bill is too much in conformity with the former Act, through which there runs so much of the spirit of an individual specification, in place of the broader views and more general directions that should distinguish an act of the legislature.

While to us as builders this minuteness of detail is comparatively unimportant, to our employers the public, it is a source of annoyance, impediment, and expense—at the same time that it is productive of no real public good.

An efficient security against the transmission of fire from building to building, and the protection of the public against accident by insufficient structures adjoining public ways, are all that the public weal requires, for against all other mischief the private interest of the owner is a sufficient guard. The more enlightened views of the present day have opened a fresh field in the sanitary provisions for the first time incorporated in the Act 7th & 8th Vict., cap. 84, and for these purposes it doubtless is well that the legislature should interfere; but a more striking proof of the manner in which legislation has been overdone can hardly be found, than in the fact that the Act 7th & 8th Vict. cap. 84, upon which the then First Commissioner of Woods and Forests, the indefatigable and intelligent Lord Lincoln, expended so much time and saw so many deputations, which itself consisted of no less than one hundred and twenty clauses, with schedules that almost exhausted the alphabet, and twenty different forms of notices, having been once amended by an Act containing eight clauses, now requires a further Act, with twenty-eight additional clauses, ten alterations to schedules, one set of new rules, and eight new forms of notices, making an aggregate of 119 folio pages, with which every one interested in buildings must become familiar, on pain of incurring the penalties against which the ordinary authorities of the law of the land will be no safeguard, and afford no appeal.

THOMAS PIPER, Hon. Sec."

To that portion of schedule A in the new bill, which provides that,—"If a building be situate within 16 feet of another building, not in the same occupation, the external wall of which last-mentioned building shall have any openings on the side towards the first-mentioned building, then no opening may be made in the opposite wall of the first-mentioned building,"—and to the other following clauses touching the same matter,—both builders and district surveyors strongly object. If passed as it now stands, it will be a most unjust and unnecessary interference with private rights.

For our own parts we sincerely hope that the bill will not get through Parliament before the session closes; all agree with us in our objection to multiplying the enactments relating to buildings, and the uncertainty and difficulty which must result from such a course. To pass it this session in order to repeal it next, as is proposed, will but uselessly encumber the statute books, and will give much more trouble to all engaged in building within its control, than can be compensated for by the means of ameliorating some present hardships which it affords.

AN ACCOUNT OF THE PALACE OF CHAMBORD, FRANCE.

CROSSING the Loire, you pass along a sandy road through a district of vineyards, till you enter a forest, in the midst of which, and at about four leagues from Blois, lies the celebrated *Château de Chambord*.

It is difficult to describe the effect it first creates upon the mind—it looks so perfectly unlike any thing one has ever seen before. Below—its massive round towers and perfect simplicity give the idea of the strong fortress of ancient date. Above—the wildest confusion and profusion of the most fantastic, the most beautiful, and the ugliest forms, all mingle together and produce an architectural scene that cannot be imagined.

The building is immense, and has an appearance of extreme grandeur, stateliness, and solidity.

Androuet Ducerceau says, "All this edifice is admirable, by reason of its great massiveness, and presents an effect wondrously superb on account of the immensity of work in it."

It is said to have been begun to be built by Francis I. after his return from Spain, about the year 1526, and that nearly 2,000 workmen were employed on it for many years.

The centre building is in the form of a square, having at the angles four great round towers about 60 feet in diameter. This centre square building is inclosed, as it were, within an exterior court, having at its angles round towers also. Of these, the two in a line with the principal building nearly resemble those of the centre, with which they are connected by a continuation of the front; and the two towers at the other extremities are smaller, and connected with an insignificant range of buildings for stables, offices, &c., and which, though built by Mansard, in the time of Gaston d'Orleans, are a complete eye-sore contrasted with the more ancient building.

I believe it is unknown who was the architect of Chambord. Primaticcio has been mentioned, and it seems to me likely to have been designed by an artist accustomed to flights of the imagination, rather than by an architect who would have studied greater appropriateness in the forms.

Though it is not so stated in any account that I am aware of, I cannot help fancying that the round towers must be the remains of some older building, so completely does the plan resemble the inclosed strong-hold, the old *maison-forte* of the earlier middle ages.

Three ranges of pilasters at almost regular intervals, girt the exterior of the principal building, which is partly relieved with open galleries; above these is an entablature, shewing the same kind of machicolation and shell-work as in the building of Francis, at Blois; and above the cornice is a balustrade, which girts the platform on the roof. Towards the interior of the court, the architecture possesses more variety, and at the two angles is an open staircase of beautiful design, resembling the one at Blois.

But the roof is the glory of Chambord. The whole top of the building is one grand terrace, paved like a marble court.

Immense pointed roofs, more than 50 feet high, rise above the towers like ornamented pyramids studded with magnificent dormers and gabels, intermingled with elegant chimney shafts and towers, decorated with niches and flanked with columns in most beautiful proportion.

Elevated above all the rest is the grand centre staircase of the building (of the interior of which I will speak presently). This, as it rises above the platform, is surrounded by columns supporting a gallery, from which spring eight grand flying buttresses, ornamented with gigantic salamanders and supporting the cupola, which terminates in the remains of the famous *fleur-de-lis*, which gave the name to this crowning glory the "*Tour de la Fleur-de-Lis.*"

There are published views to explain, in some degree, the appearance of this wonderful work; but no drawing can convey the full effect of this labyrinth of palaces, seen at different points of view, as you wander about this magnificent platform.

The various towers and chimney-shafts are of most elegant proportion; but the details, though of beautiful design, are rarely executed with the finish of the work at Blois, which they much resemble.

The caps of the pilasters, and the corbels at their base, are of infinite variety.

On the gable and the buttress of centre tower may be remarked dark lozenges and circles, and also a sort of fluting. To these I beg to call your attention; for though looking from below like inlaid marble, they are in fact nothing but pieces of slate nailed on the surface.

The interior arrangement of the château is extremely peculiar. On each floor one vast apartment stretches in the form of a cross, from back to front, and from side to side, of the building; and in the centre of the cross is the celebrated double staircase, rising through every floor, and forming the highest object in the roof above.

In each of the four angles left by the cross is a separate suite of apartments, including also others within the angle towers, and from two of these, again, there is a communication by another suite of rooms with the two outer towers on the same front. The large cross-shaped chambers are called *Salles des Gardes;* but I cannot think that rooms of such magnitude, communicating with every quarter of the château, could ever all of them have been intended as guard chambers. I rather imagine, considering that Chambord was erected by Francis I. as a hunting palace, that it was arranged on this singular plan as a place where state was to be laid aside, and that these halls were places of general rendezvous. Their ceilings are vaulted and divided into panellings, filled with the initial F and the royal salamander in flames alternately. In one of these curious chambers, where scenes of state and ceremony have often occurred, Moliere's play of the "Bourgeois Gentilhomme" was represented for the first time, before Louis XIV.

The grand staircase is wonderful—wonderful for the effect it produces and the beauty of its proportion and its ornaments, rather than for any peculiar difficulty of construction. Its construction may be thus described:—the outer diameter of the staircase is, I suppose, about 30 feet; in the centre of this is an inner wall, in diameter about 10 feet; between these two circles the stairs wind up in a double spiral, commencing at opposite points, so that parties entering at each, in ascending, see each other repeatedly through openings, but do not meet till they arrive at the various floors. The exterior of the staircase is decorated, and the interior wall is also highly ornamented with a variety of beautiful niches. The salamander in flames and the initial F are also introduced, the latter surrounded with a frame of cords—emblem of the Cordilieres to which the king's mother belonged. Of the termination of this staircase above the roof I have already spoken.

Of the four hundred and forty chambers which this mighty château is said to contain, there is not one that has escaped the distressing evil of whitewash, and few of them retain any ornament indicating their former use or recalling their former grandeur. I sketched a ceiling of a small vaulted room, said to be a private chapel, where the panels resembled those in the *Salles des Gardes;* and I remarked a chamber where there were indications that a painted frieze, three feet deep, had been; but everywhere the walls are bare—not a vestige remains of any kind of hanging or decoration. Destruction, the most ruthless that can be conceived, has swept over the whole interior: all the furniture, the paintings, the wainscoting of the walls, the very doors, the windows, were burnt, broken, or stolen at the time of the Revolution.

Yet, what must the chambers have been at the time of the royal Francis, who so loved to surround himself with objects of art!—what thousands of works produced under his fostering care still remain to us! Who can doubt that the rooms, so wretched now, were one blaze of splendour then? that, besides

the paintings of Primaticcio, and the frescoes of Jean Coussin, who were engaged there for years, there were assembled there the choicest works of the greatest masters—groups in marble by the rarest Italian hands; bronzes by Cellini, and, equally precious, his tasteful ornaments and vases in gold and silver; delicate carvings in ivory; enamels, by Leonard de Limoges; glasses from Venice. Fancy that the walls were hung with the richest tapestry, or leather, or brocade—that the ceilings were blazoned with colour and glittered with gold—that tasteful furniture, which Il Rosso and Primaticcio disdained not to design, filled the various apartments; picture the king, in the midst of his brilliant court, dazzling the eye with the richness of the costume and the beauty of the ladies—and the mind will indeed conceive a scene at Chambord, in vivid contrast to what now meets the view.

J. G. Crace.

FALL OF THE CHESTER RAILWAY BRIDGE.

Continuing our notice of the evidence brought forward at the inquest—Mr. Stephenson flatly contradicted nearly all Sir Charles Pasley's statements, and said he had built several bridges during the last twenty years after the same manner, and never knew any breakdown but this. He said that Sir Charles Pasley's statements were wide of the truth.

Mr. Locke, engineer of the Grand Junction line, corroborated Mr. Stephenson's testimony; he said the bridge did not fall from any pressure downwards, but from a side-blow; this the examination of the fragments proved to him; he considered all manner of iron bridges objectionable, when brick and stone bridges could be had, as was the case, cheaper and better. Mr. Locke then said, "I believe that much blame lies at the doors of the Commissioners of the Admiralty, the Board of Trade, and the Commissioners of Railways, who require bridges built with too large a span, to answer their views as to shipping and other matters, without at all consulting the interest or safety of the public. I wish this to go forth to the world. I wrote a letter to Government on the subject, and am sorry to say that it was not attended to."

Sir E. Walker said he would not travel on the line, and he wished Mr. Stephenson might be able to make himself right with the public.

Mr. Stephenson said, he hoped he should again obtain the public confidence.

Mr. Walker and Capt. Simmons would not give an opinion until, from a further inspection of the works, they could ascertain if there was any trace of the engine and tender going off the line.

On Tuesday night Mr. Locke's statement was brought forward in the House of Commons, by Mr. Gisborne, who said that Mr. Locke's words were these:—"That the Admiralty and Board of Trade were disposed in many cases, to attend more to the requirements of waterway and navigation than to the safety of the public, and very unnecessarily to place upon engineers the necessity of covering a width of span which could not be made entirely safe. That Mr. Stephenson, Mr. Brunel, and himself addressed a joint letter to Lord Dalhousie, embodying these opinions, to which letter they never received any reply." Mr. Locke had authorized him (Mr. Gisborne) to state, that to this opinion he was prepared to adhere before any select committee, or before any court of law. Under these circumstances *it was right that the question should be asked,* had this letter been received?

Mr. Strutt said, it was a gross misrepresentation, but admitted that a letter had been addressed to the board by Mr. Locke and other engineers. But it referred, not to the conduct of the railway department of the Board of Trade, but solely and only to a clause in an Act of Parliament, the Railway Clauses Consolidation Act. The letter suggested an alteration in that Act, but contained no complaint whatever; it had no relation to any bridge across any river, or to bridges generally, but merely to bridges across roads; and these, from the limited span required, could not give rise to any question affecting the public safety.

Sir G. Clerk said, with regard to the complaint against the Admiralty, it was the duty of that board, and a matter of paramount consideration, to see that the free navigation of navigable rivers should not be obstructed by any railway works. If a railway company desired to run their line across a river, it was the business of the engineer to see, if he obtained powers, that the bridge constructed was of suitable dimensions and of sufficient strength; and, if any casualty occurred, on him must rest the entire responsibility.

Returning to the failure in question, the public are, as yet, far from satisfied. We shall have some remarks on the subject to offer next week.

FOREIGN ARCHITECTURAL AND COLLATERAL INTELLIGENCE.

The Suez Maritime Canal.—[Revue de l'Architecture et des travaûx Publics.—Crelle's Journal für die Baukunst.]—The interest which English and French engineers have chiefly taken in the above subject, has been thus divided, that the former laid more stress on a railway from Suez to Cairo and Alexandria, while the French shewed more predilection for a canal. From these and his own studies, M. Linant has projected a plan, which had been laid before a technical commission in November last, who considered it practicable, but advised that some further details ought to be first ascertained on the spot, before any decision should be arrived at. Consequently a *société d'étude* had been formed, which raised 150,000 francs for that purpose amongst the three groups of shareholders. The English were represented by Mr. Stephenson, who has to make the survey on the Red Sea; the French, by M. Talabot, who had to survey the spot of the intended canal; and to M. Negrelli, the Austrian engineer, the Mediterranean department had been consigned. Those preparatory surveys are to be ready by next autumn, at which time these three gentlemen have to meet and confer with Ali Pacha. Amongst the German shareholders, the Austrian Lloyd, and, in fact, the whole of the Trieste mercantile interest is concerned, as they want thereby to advance the views of the German Indian route.

On the necessity of the *neutrality* of the canal of Suez, if we may say so, our French cotemporary above cited makes the following remarks:—"If you were to plant any national colours on this maritime canal, a general confusion, nay war, might ensue. In fact, no great world-road can be put under the control of a nation, any more than a railroad under that of a corporation. As all nations are equally *interested* in the free use of the Suez canal, how could they ever suffer that it should be made, possessed, and worked by any single government? Every one who has soldiers and cannons is unfit for such proprietorship. For realizing such a plan, eminently peaceful and cosmopolite principles must be called into aid, viz., a company formed by the capital of all nations, and not being under the protection of any especial government, but, by its very constituency, under the collective egide and patronage of all. Thence, it would result, that such an European company would take care that this world-way would be constantly open to all and every vessel, whatever its colour be. It would be equally impossible that such a company would not maintain an equality of rights, as it would be controlled by the sailing and commercial interest of all Europe and America, —always sure, that if ever warped by any national or governmental consideration, its very *existence would succumb to political or military* complications. *With the company of the Suez* canal, interest and (moral) *principle* are fully in unison; and the free communication of the two seas will guarantee general peace and general justice. It would, however, not be enough to declare merely the canal *neutral ground;* it will require to include in this stipulation a band of land of about a league in breadth, say from Suez to Pelusium, that the company may freely execute its works and make suitable habitations, little gardens, &c., for their workmen. This neutral territory, in fine, shall *not* become the property of the company; it is to be the property, as it were, of all the shareholding nations of the human kind! The company not to have but the *usufruct*, and a perpetual ease.

"Dreams! we hear some of our readers exclaim. But many such have got *existence* of late—a memento for all those weak spirits who, by shouldering and doubts, hide merely their own impotency of creation, and who would wish to arrest movements, because they see that it is *not* they who are to *head* them. Those times, however, are fortunately past."

Gaertner's Death—has affected, and will long continue to affect, the whole population of Bavaria, as well as the monarch, whose especial architectural adviser and confidant he had been. He was not only an excellent artist, a very efficient academical president—but, what is rarely combined, a sterling man of business. *Society* also loses much in him, as his spacious and open brow smiled on every thing, and cheered up every thing. After the completion of his studies, he visited Italy, where, especially in Sicily, he staid a good while—and then in France and England completed his cycle of art-experience and observation. In 1820 he became Prof. of Architecture at the Munich R. A.—and since 1829, when the king appointed him architect of St. Ludwig's Church, an uninterrupted series of states and monumental structures were produced by his great activity—some of which were alluded to in a recent number.

Brewhouses for the People.—For the sake of affording the poor, suffering from the present high prices, a means of keeping up their strength, as well as weaning them from the deleterious dram taking, an enormous brewhouse has been built at Teschen (Silesia), at the expense of H. I. H. (the late) Archduke Charles, costing upwards of 120,000fl. A Bavarian brewer has been employed in brewing and selling very weak, but unadulterated beer at cost price.

Mr. Warner's Long Range—in 1792.—It was in that year that a plan was submitted to the National Convention, to carry on war in the *air* by way of *balloons*. One was eventually made, and used, we think, at the siege of some fortress; but the Warners of those times were soon warned off their attempts, by the enemy *firing* at this long range balloon.

CHURCH ARCHITECTURE AND THE RITUAL.

Sir,—In a recent publication of Dr. Hook, of Leeds, called the "Three Reformations," there are some important observations upon the mediæval style of church architecture, and after lamenting the tendency of an over study of that style to assist in infusing a taste for Romanism, he adds an earnest recommendation to the architects of the present day to invent or adapt from models of the primitive ages a distinct style of building for use in the church of England. The subject is one necessarily of much interest to very many of your readers, and I therefore trust you will give admission in your columns to the following extract from the publication above referred to:—"For magnificent and sumptuous churches, you have primitive precedent as well as scriptural authority. But these were not Gothic churches. In various particulars and details they differed from the churches of the middle ages, and why? The rituals of the primitive and medieval churches differed; and the primitive Christians considered that a church was to be built for the ritual, and not the ritual adapted to the church. Their churches were erected to meet the exigencies of the Greek ritual and the customs of the people. And surely this is the principle upon which new churches ought to be erected in England. *Is it not manifestly incongruous to erect a church for the ritual of the 19th century?* In the 14th century, the Litany was sung or said in procession, and there were frequent processions in churches; in the 19th century the Litany is sung or said kneeling, and processions are of rare occurrence. In the 14th century the sermon seldom formed part of divine service, and was often delivered in another part of the church; whereas now the sermon forms part of the communion service. Not to instance other particulars, it is quite clear, that for rituals differing so widely, another arrangement of the church is necessary. We all admit, that our forefathers were in error when they sought to assimilate the church to the conventicle, in order that dissenters might not perceive what an honest man wishes to have perceptible, the difference between the principles professed in a church

and in a meeting-house; they were led to this by their ultra-Protestantism.

"Let us take warning from their example, and, instead of rushing into the opposite extreme, take care that our admiration of Gothic churches does not lead to mediæval taste, which will end in Romanism. Why are our architects to be mere servile imitators of their predecessors? Why are they to have no scope for genius? Surely we ought, acting on primitive principles, to encourage their inventive powers; we ought to say to them, 'As Gothic architecture was at its excellence in the 14th century, you ought to master the principles of your art from the ancient models; and then, having studied your Prayer Book, you ought to apply those principles to the production of an edifice, in which the services of the existing Church of England may be performed in the beauty of holiness.' Even with respect to galleries, they are unsightly objects, but they are sometimes necessary. In the 14th century, when the ritual was in a dead language, the people assisted, but took no part in the service. The ritual has now been translated into the vulgar tongue, that all the congregation may hear, and bear their part in the services. While, in mediæval churches, ample space was required for processions, we, on the contrary, require to have many people accommodated in the smallest possible space. Where this can be done without galleries, every one will desire to dispense with them; but practical men will be unwilling to remove them entirely, until our architects have seriously considered whether they cannot be made ornamental as well as useful."

I have met with a passage to the same effect in the good but quaint old Fuller, under the title of "The True Church Antiquary," in chapter 6 of the Holy State, and I hope you will allow it to be a pendant to the extract from Dr. Hook.

"THE TRUE CHURCH ANTIQUARY."

"He is a traveller into former times, whence he hath learnt their language and fashions. If he meets with an old manuscript, which hath the mark worn out of its mouth, and hath lost the date, yet he can tell the age thereof either by the phrase or character.

He baits at middle antiquity, but lodges not until he comes at that which is ancient indeed. Some scour off the rust of old inscriptions into their own souls, cankering themselves with superstition, having read so often *orata pro animâ*, that at last they fall a-praying for the departed, and they more lament the ruine of monasteries than the decay and ruine of monks' lives, degenerating from their ancient piety, and painfulness. Indeed, a little skill in antiquity inclines a man to Popery, but depth in that study brings him about again to our religion. A nobleman who had heard of the extreme age of one dwelling not farre off, made a journey to visit him, and finding an aged person sitting in the chimney corner, addressed himself unto him with admiration of his age, till his mistake was rectified: for '*Oh Sir*' (said the young old man), '*I am not he whom you seek for, but his sonne; my father is further off in the field.*' The same error is daily committed by the Romish Church, adoring the reverend brow and grey hairs of some ancient ceremonyes, perchance but of some seven or eight hundred years' standing in the church, and mistake these for their fathers, of farre greater age, in the primitive times."

I am, Sir, &c., A LAYMAN.

Liverpool, 31st May, 1847.

JOHN FLAXMAN.—In 1843, Mr. Watson commenced a full-sized portrait-statue of this great sculptor. The clay model was so highly approved by a number of noblemen and gentlemen, that they opened a subscription, and formed themselves into a committee for the purpose of making the model a permanent marble statue. The clay has been transformed to plaster, and considerable progress has been made in the marble. The likeness of Flaxman is said to be good, and the sitting attitude easy and graceful: we have not yet seen it.

A NON-CONDUCTOR.—A thickness of half an inch of clay and sand has been found to intercept the heat of a mass of eleven tons of white-hot melted cast-iron for twenty minutes, without the heat on the outside of the vessel being sufficient to pain the hand.

THE GAS MOVEMENT.

RETROSPECTS AND PROSPECTS.

ONE astonishing peculiarity in the manufacture of gas is the fact, now more and more clearly evolving and forcing itself into notice, that, for every separate outlay, there is not only a separate compensation, but an additional profit;—that every step in the process of manufacture, not only pays itself, but more than pays itself; or, at least, that by means of patented or other improvements, of which every Gas Company has it in its power to take advantage, there not only need be no positive loss on a single article or process used, but there may or can be a positive gain on one and all.

Thus, for instance, the coal whence the gas is evolved, in being consumed into coke, especially on Mr. Cox's patented process, not only comes out without diminution, but with a positive increase, of its previous value, coal shovelled into the retort at 8s. 6d. a ton, as in Liverpool, coming out to be sold at no less a sum than 23s. 6d. a ton! (*a*)

Thus, too, for instance, in the purification of the article, especially on Mr. Johnston's patented process, not only is there no positive loss, the gas tar, ammoniacal liquor, gas salts, &c., being all valuable and saleable; but, on the latter process, so immensely increased in value, that the patentee offers not only to grant a free license to all companies using that patent, but actually to supply them with all the purifying materials, and that on the mere condition of ridding them of the residue, after the gas has been purified and prepared by passing through it! (*b*)

Then, too, as remarked by a correspondent, even the very "clinkered fire-brick-work of the benches and the burnt out retorts might find a market." (*c*)

But more than that, where coal may not be so easily or cheaply had, or where coke may not be so profitable,—though where *that* may be, in these times of general railway and steam power ramification, and consequent locomotive and other steam engine consumption, it is not so easy to notify as the reverse would be,—by means of Radley's patent, gas may be made even from bones or animal matter, hitherto unproductive for such purposes, and that, too, of a quality "superior to any ever made in the metropolis," at a cost of less than 4d. per 1,000 cubic feet! And here, also, the residual products are extremely valuable. (*d*)

In short, it requires very little foresight to perceive, as we have ere now predicted, that "there are financial wonders here to be opened up to us nearly akin to, and no less astonishing than, those statistical and economical subversions of all common notions that are thought to be on the eve of realization, by chemical and other companies, for the profitable disposal of the old and venerable nuisance of sewage and manure." (*e*)

And although some of the patent or other economical processes, here partially pointed out, are new or recent, the old gas companies are certainly quite inexcusable in not having yet given the public the benefit of such processes, some of which, without a doubt, they have fully appropriated to themselves since the antiquated era when gas was 30s. per 1,000 cubic feet. Is it not manifest, indeed, and that, too, even on the most moderate view of the matter, that while the coke consumer pays for the raw material, and the agricultural or other chemist for the preparation or purification of the gas produced from that material, the gas company have actually nothing in the shape of outlay or expenditure with which they can justly charge the gas consumer at all, except with the interest on capital sunk, once for all, at the outset, in the construction of their gas-works, and the ramification of their pipes, and with the wages paid to their officers and workmen for labour expended in carrying on their work! The public expectation, they may depend upon it, will not brook much more delay in any quarter. A significant index to the growing public opinion may be plainly deduced from the fact, that while not long before we opened the present campaign against the monopoly of gas, "*only* 7s. per 1,000 cubic feet" was a very ordinary turn of expression; now we happen to cast our eye on an intimation circulating in the usual course through the newspaper press, that the "*enormous charge* of 7s. per 1,000 cubic feet" is made by one gas company, namely, the Wigan, though we needed scarcely to have specified which, since it is not the Wigan company alone that make both enormous charges and enormous profits on what has thus been clearly proved to cost them, for material, literally NOTHING.

(*a*) See THE BUILDER, p. 85, *ante*. (*b*) See p. 109, *ante*.
(*c*) See p. 241, *ante*. (*d*) See p. 172, *ante*. (*e*) See p. 85, *ante*.

One future result to which we looked forward in the universal extension of the use of cheap and good gas, as "the nearest possible approximation to the purity and clearness and the cheapness and diffusion of the light of day," was the substitution of it in place of coal, wood, or peat fires, with all their disagreeable adjuncts of dust, smoke, sulphur, &c.; and it is already a satisfaction to us to find the public mind preparing itself, as it were, for such "financial wonders," as in a recent observation by the *Liverpool Albion*, of the fact, that the recent publication of the evidence on the subject of the supply of gas "would shew that we are merely in the first stage of the use of it,—that we are children in our knowledge of its benefits for purposes entirely apart from lighting,—and that the question of gas has ceased to be exclusively a question for those who burn it for illumination. It has become a question affecting us in various departments of household economy and convenience, and will become a primary question on the score of public health. We have it on the testimony of Mr. Herapath (the Bristol chemist), that with gas at 3s. 8d. (and on the *present* consumption of Liverpool it ought to be 3s.), it would be as extravagant as it is annoying to employ coal-fires in dwellings for cooking and warming, and that its general use will render the atmosphere of towns nearly as pure as that of the country. The popular demonstration of these facts (and there could be none more popular than by the publication of Mr. Herapath's evidence) would be productive of invaluable benefit; and the gas companies themselves could not more effectually serve their own interests than by the general 'diffusion' of such 'useful knowledge.'"

The following statistical information, extracted from the *Pharmaceutical Times*, may be considered with reference to what we have occasionally said about the metropolitan gas:—"At the present time there are in London alone fifteen gas companies, having mains laid in the various streets to the extent of several hundreds of miles, supplying above three thousand millions (3,000,000,000) of cubic feet of gas, requiring for its production more than three hundred and thirty thousand (330,000) tons of coals. It appears, from evidence given before a commission on a parliamentary inquiry respecting the 'Dublin Consumers Gas Company Bill,' in February last (1847), that there are in that city two gas companies, having consumed during the year 1846 twenty-seven thousand and thirty-five (27,035) tons of coal, producing about two hundred and forty millions (240,000,000) of cubic feet of gas. 'In the present day,' adds the writer, 'it is almost unnecessary to point out the advantages of lighting with coal gas. It is more economical, more safe, and more convenient than either lamps or candles; *and, as a system of police, its advantages cannot be over-rated; unlike the old oil-lamps of our streets, the burning gas really diffuses light, very much to the prevention of crime.*'"

We are pleased to observe, that the idea of binding down new companies to a maximum price in their Acts of Parliament has been adopted, as at Ashton, although it is notorious that "a coach-and-six may be driven right through many Acts of Parliament." Were assured and efficient means adopted, however, to limit companies to a certain moderate per centage of profit, they would soon be compelled to give the public the benefit of every available process, both old and new, for the reduction of the expense of its manufacture to the minimum. In fact, they ought to be limited, as we have just shewn, *at least* to such prices as would afford them a fair rate of interest on sunk capital, and repay them with interest the wages on labour expended.

Some conclusive experiments with Mr. Leslie's new burner, made by the parochial authorities of St. James's, to which we will refer next week, should make vestries pause before entering into fresh contracts.

We expect, ere long, to have some startling facts to disclose.

NOTES IN THE PROVINCES.

The Albert Pier at Portsea, now completed, is expected to confer many advantages on the town. Even in a sanatory point of view, the healthy promenade which it opens up is dwelt on by the district papers as of itself a blessing. Other improvements in connection with it, such as the erection of a suitable hotel, &c., have been suggested.——A dispute has arisen at Southampton between the sewers and highways committee and the surveyor for paving, lighting, and sewerage to the board, respecting the expenses of the inspection and repair of sewers, which the committee allege might have been avoided by proper vigilance in preventing the introduction of improper materials and negligent workmanship. The surveyor, Mr. Doswell, replies as he conceives satisfactorily to the implied charge against him, but after a service of thirty-six years under the pavement board, tendered his resignation of the sewers surveyorship, which was finally accepted by a majority of 7 to 3, 2 neutral.——The foundation-stone of the new Roman Catholic chapel at the Cistercian Convent, Stapehill, near Wimborne, Dorset, was laid on the 25th ult. The design of this small edifice will be early Gothic, similar in character to that of several other churches planned by the same architect, Mr. C. Hansom, and in course of erection in different parts of the country.——The Dean and Chapter of Bristol Cathedral have given orders to Mr. Bell, an artist in stained glass, to restore the east window, which was injured by Cromwell's soldiers, and patched up at the 'restoration.' It is to be hoped that due care will be taken.——The foundation-stone of the nave arcade of Rotherfield Greys new district church was laid on Whit-Tuesday with all due parade, but the work was undone with very little ceremony through the ensuing night, and the coins abstracted,—by some new order of antiquaries, no doubt, interested in such deposits, and curious to ascertain the exact nature and value of the contents of the bottle containing them. Whether the high sheriff and the magistrates who headed the first procession intend to repeat the ceremony is not stated, but doubtless they will endeavour to do all due justice to the diligent antiquarian who has brought it to so lame and impotent a conclusion, if they catch him, as it is to be hoped they will. The architect is Mr. B. Ferrey.——At the Bedfordshire sessions a discussion lately arose as to the desirableness of having a new bridge in preference to repairing the old one, known as Harrold-bridge. The surveyor was eventually instructed, under certain contingencies, to cause a new bridge to be proceeded with; otherwise to repair the old one in the meantime. An estimate of 2,980*l.* for the erection of an iron bridge, by Messrs. Barwell, —the only one received,—was conditionally accepted. —— Public baths are about to be erected at Colchester from a design by Mr. Penrice, the necessary funds having been raised by subscription. —— Extensive repairs and restorations are in progress in the chapel of Magdalen College, Cambridge, and the plan of the original structure of the edifice has been revealed, though many of the original enrichments have been destroyed. The original character of the building is to be restored to a great extent, and modern decorations removed.——Advertisements of the proposal for erecting a church in the district of St. Paul's, Derby, have been issued.——The Improvement Commissioners at Wolverhampton have at length resolved to authorize the New Cattle Market Committee to complete the purchase of the site (25,773 square yards for 6,760*l.*), and to proceed as soon as possible with the erection of the market. The meeting was afterwards horrified with a medical report on the "filthy state of those very questionable settlements known as Caribbee Islands and Cole's Croft," and it was determined that the state of the drains and night-soil deposits should be forthwith looked to.——On Saturday week the architect and builder of the South Staffordshire General Hospital at Wolverhampton feasted 80 and upwards of the workmen, who have covered in one wing of the building.——The nailers at Stourbridge lately met to resolve on a strike, but a majority determined otherwise.——Another boiler-bursting case has just occurred, whereby thirteen workmen, at the Pontnewynngdd Iron Works, have been seriously injured. The boiler was an old worn-out one, which a proper inspector, such as we have so often advocated the necessity of appointing, would not have allowed for one moment to endanger life and property; in some places it is said to have been thinner than the sixteenth of an inch! As for the damage of property, estimated at 1,000*l.*, besides loss of profit by stoppage of the works for a month, there is probably little to regret where so much appears to have been risked in the attempt to take so great and far too long continued a profit out of a used up article, which ought to have long before given place to a new one, however considerable the expense; but the personal injury to so many poor workmen, and the serious loss of employment to so many more are deeply to be deplored. Such evils, however, will probably go on, how much longer it would be hard to tell, unless, indeed, some stray bishop or another should happen to be 'devoted' to the boiling or scalding process in some decided case of boiler explosion, while another is being roasted by railway combustion, for behoof of all and sundry suffering lieges.——The new landing stage at Liverpool, was launched on Tuesday week, and successfully transplanted into its destined place. The tonnage of this handy piece of workmanship is 16,000, and the area of the deck which is 508 feet long, and 82 feet wide, is 4,467 square yards, cost 50,000*l.* expense of working 1,500*l.* per annum exclusive of repairs. There is a light-house, at each end with powerful reflectors. The stage is to be connected with the pier by two iron bridges 150 feet long and 17 feet wide, one for ascent the other for descent. Mr. Cubitt is preparing these.——The foundation-stone of the entrance lodge of the new cemetery at Hull was laid on Wednesday week.——The Hartlepool West Harbour and Docks were opened on that day. These important works were begun in January, 1845. The size of the harbour (which is inclosed by two bold stone piers) is about fourteen acres; the dock [eight acres, with quay walls on every side, and capable of accommodating between eighty and ninety large vessels afloat. The entrance gate is 42 feet in breadth. The dock is lighted with gas, and there are water-pipes on all sides constantly affording an unlimited supply. The staiths were constructed by Messrs. George Brown and Brothers, of Stockton. The engineers of the dock and harbour were Messrs. Simpson and Lynde, Great George-street, Westminster; resident engineer, Mr. David Bremner. A graving dock is in course of being constructed, and a second floating dock is to be executed.——The foundation-stone of the Gateshead Mechanics' Institute was laid on Monday week. It is to be built by Mr. Edward Bruce, of Gateshead, under the inspection of Messrs. Wardle and Walker, of Newcastle, the architects, who designed the building: cost of plans and superintendence, 42*l.*; cost of building, 840*l.*; site, 124*l.*; in all 1,000*l.* odds, of which 800*l.* have been realized.

*** Our shrewd Taunton 'Mechanic' led us a little astray, it seems, as to the architect of the Unitarian schools there: instead of 'Mr. Ingle,' [in fact, in the MS.,—pretty well written too,—we find it more like 'Mr. Jingle'] it should be Messrs. Fuller and Gingell of Bath.

Ancient Frescoes Discovered and Destroyed.—Some very early and fine specimens (?) of fresco paintings were recently discovered on removing a thick coat of whitewash from the inner walls of Shawell Church, Isle of Wight. These paintings probably covered the whole of the interior walls, as detached portions can be traced in different parts of the church. Some of them were extremely curious and interesting, but notwithstanding the efforts of members of the British Archæological Association resident in the vicinity, they were ruthlessly destroyed even before tracings of several of them could be preserved, and the only record of so interesting a discovery is a fac-simile of others made by Mr. Dennet, and now in the possession of the Archæological Association, with a minute description read to the members. Why have not the names of the *guilty* parties been exposed to public comment?

Competition.—An extension of time to 25th inst., has been announced for sending in plans, &c., for the new church at Brompton, in Kent, already advertised in The Builder.

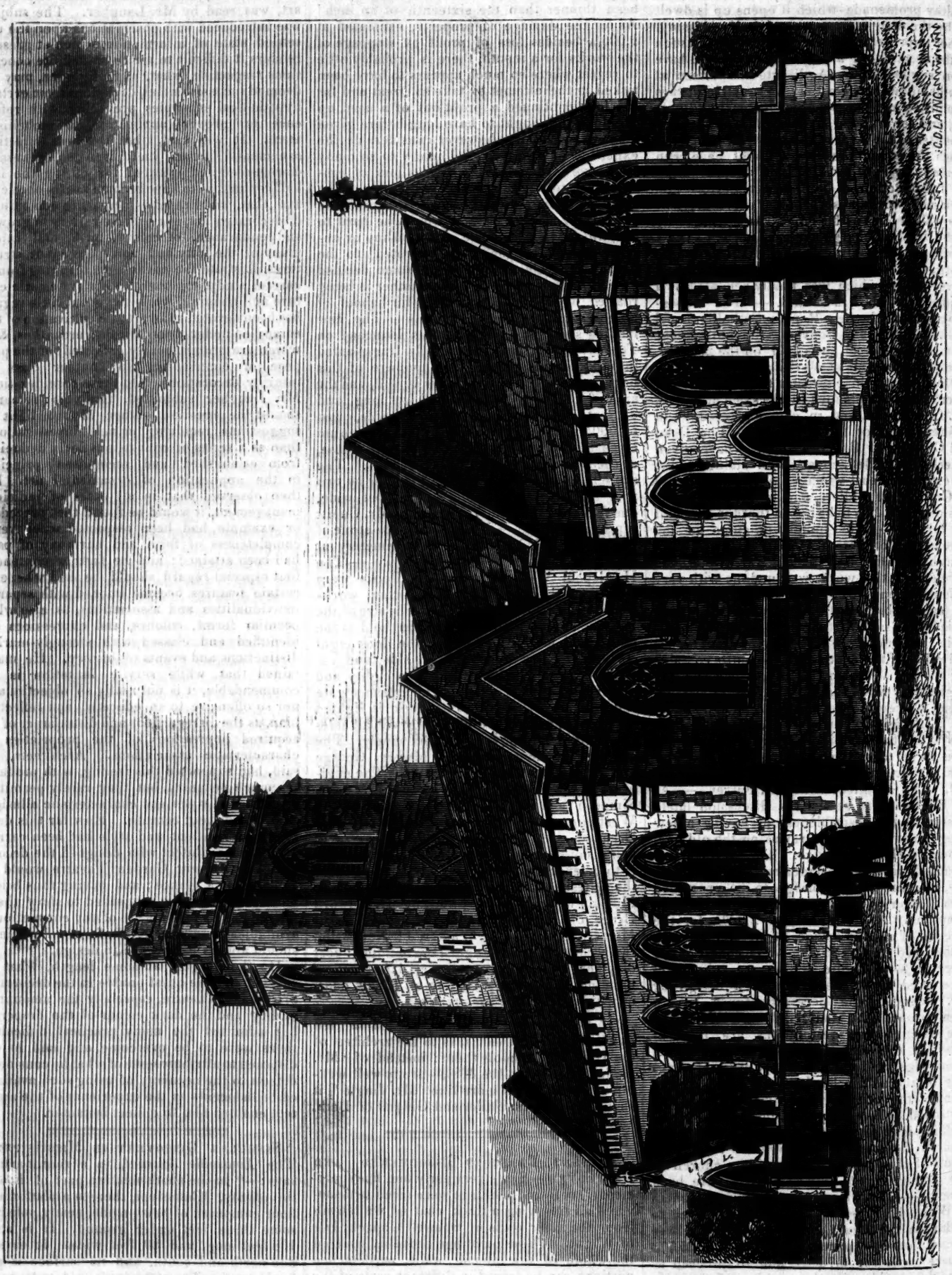
DECORATIVE ART SOCIETY.

May 26.—Mr. Boulnois in the chair.—A paper on the decorations of Covent Garden Theatre, 1847, considered in their relation to art, was read by Mr. Laugher. The subject was introduced with observations upon the unsettled state of information which at present renders it difficult to arrive at definite conclusions respecting what, at first glance, may be deemed inconsistencies, deviations from certain hypothetical principles prevailing with reference to proper application of embellishment. It was said, that the laws affecting ornamental forms had been so generally disregarded and uncared for during the last half century, as to have become nearly obsolete; and that, amid rapidly-increasing emanations of decorative art, of a profuse variety in growth and endurance, of colour, form, and value, many of the lofty and now permanent structures illustrate the advantages resulting from a careful study, together with a systematic culture and training, while as yet but little regard has been devoted to an artistic cultivation of the entangled under-wood shrubs, arcanthus, &c., which are promiscuously collected for the purpose of contributing to another class of interior decorations. On these considerations Mr. Laugher submitted, that his remarks should be received rather in the light of suggestions requiring critical investigations, than as a series of conclusions fairly deducible from established and recognised principle in the application of ornamental art. He then observed that in all cases of judicious management, it would be found that precedent or example had been respected whenever a completeness of form and harmony of parts had been attained; and he further contended that especial regard should be had whenever certain features became imbued with separate individualities and associations, as also when peculiar forms, colours, and expressions are identified and classed with strongly-marked distinctions and events of history. He maintained that while servile imitation is not commendable, it is not really so objectionable nor so offensive to an educated and reflecting man, as the disregard for and disturbance of his acquired impressions of the proprieties in characteristic associations. Architects, he said, had supported this feeling, with probably too much pedantry, but they rarely permitted a mixture of styles and characteristic allusions to occur without censure. How far this deference to precedent and style had been carried out by the architect who designed the decorations for Covent Garden Theatre would be detected in a glance; and having thus briefly alluded to them, he proceeded to show that a miscellaneous assemblage of any conventional, symbolical, or characteristic forms of ornament should always be avoided in design.

He then urged, at some length, what he considered to be questionable in the decoration of the new Theatre, especially the amount of gilding and the dark colour of the draperies, but admitted the many practical difficulties there were to be overcome, and said he was disposed to attribute some of what he considered defects to the necessity of using such available embellishments as the experience of the architect enabled him to collect instanter.

Singular Discovery in Mississippi.—The *Louisville Journal*, in a recent article, says:—"In the south-western part of Franklin county, Mississippi, there is a platform or floor composed of hewn stone, neatly polished, some three feet under ground. It is about 108 feet long, and 80 feet wide. It extends due north and south, and its surface is perfectly level. The masonry is said to be equal, if not superior, to any work of modern times. The land above it is cultivated; but thirty years ago it was covered with oak and pine trees, measuring from two to three feet in diameter. It is evidently of very remote antiquity, as the Indians who reside in the neighbourhood had no knowledge of its existence previous to its recent discovery. Nor is there any tradition among them from which we may form any idea of the object of the work, or of the people who were its builders. There is also a canal and well connected with it, but they have never been explored. A subterranean passage may be underneath. Farther explorations may throw some light upon its origin."

HOMERTON NEW CHURCH.—Mr. A. Ashpitel, F.S.A., Architect.



NEW CHURCH AT HOMERTON.

The need of additional churches having been very severely felt in the parish of Hackney, the rector, the Rev. Archdeacon Watson, convened a meeting of some of the principal inhabitants in 1839. It was then resolved that two, and if possible three, additional churches be erected. Subscriptions were made, and aid from the Commissioners for Building Churches and from the Church Building Society were procured. The result was, that St. Philip's, at Dalston (Mr. Duesbury, architect), and St. James's, at Clapton (Mr. Hakewill, architect) were built and consecrated in 1842. In these two places the support of the ministers might in part be derived from the pew rents; but it was felt that in Homerton very little, if indeed anything, could be derived from that source. But in 1844 Joshua Watson, Esq., the brother of the late rector, sanctioned the announcement "that a warm friend of the church would be responsible for the endowment, for the half cost of a parsonage-house, and from public and private sources, for 2,500*l.* towards the building fund." Under such circumstances subscriptions were raised, a plot of ground purchased in Homerton, and Mr. Arthur Ashpitel appointed the architect. The church contains sittings for between 600 and 700 persons, all free and unappropriated, without any gallery whatever. It is built under the Act 6 & 7 Vict., c. 37, and the district will be called the "new parish of St. Barnabas, at Homerton."

The church consists of a nave, 70 by 24, a south aisle, 65 by 17, a chancel, 24 by 19 in the clear. The tower is at the west end, and is 20 feet square, with a turret stair, and is nearly 80 feet in height from the ground line. The

style is that which prevailed from 1310 to 1350. The proportions of the whole building have been carefully corrected by existing examples, particularly from the south and south-west of England. The tower is said to be the largest finished tower near London, and contains ample room for a peal of eight bells. The tower-arch is open to the chancel, and affords a complete view of the west window. The upper string course is ornamented with the ball-flower of the period. The tracery of the nave and aisle windows is comparatively plain, but that of the east window is extremely elaborate. The aisle and nave are separated by a range of columns alternately octagon and circular. The roof is open, and the principals filled in with tracery of the period, a good example of which (that at Malling Abbey) was given to our readers a short time back, from the pencil of Mr. C. J. Richardson. The roof-timbers are supported by corbels of foliage. These, as well as the caps of the columns, have been executed by Mr. Nixon, jun., the nephew of the sculptor. This gentleman has also in hand the corbels for the chancel, and a reredos representing the two disciples at Emmaus. These, together with the greater part of the ornaments, are the munificent gifts of an individual who has contributed most largely to the purchase of the ground and to the building, and in every other way, but has most strictly forbidden any allusion to his name. The seats are plain and open, the bench-ends are moulded, and adorned with a simple poppyhead. The pulpit, &c., table and altar-rail, &c., are of oak, carved by Messrs. Pinkerton, of Eccleston-street. The font is of Box Shellatt-stone, and from the chisel of Mr. White, of Millbank. The altar-window of five lights is filled with stained glass, containing scriptural subjects interspersed with emblems, and is the work of Mr. Wailes, of Newcastle. The great west window of three lights, containing a figure of St. Barnabas, to whom the church is dedicated, and one at the west end of the aisle, also of three lights, containing a figure of St. Paul, are the works of Messrs. Ward and Nixon. The chancel windows, and several others in the aisle, are the work of Messrs. Powell, of Whitefriars. The whole of these designs (except for the stained glass) are from the pencil of Mr. Ashpitel. The floors of the aisles are paved with red and black Burslem tiles in various ancient figures. The roof and seats are not varnished, but merely rubbed over to shew the grain of the wood.

As it was imperative that the church should be lighted by gas, the architect found himself placed in considerable difficulty on this head, but he has designed some large Coronæ lucis, from an idea that he saw at Rouen, and which are now being executed by Messrs. De Bauser, of Creed lane, and it is hoped will form an ecclesiastical method of availing the church of this modern but brilliant light.

The whole fabric is of stone; the general walling of Maidstone rag-stone, and the dressings of Caen stone. The churchyard will be inclosed with a low rag-stone wall, with a Caen-stone coping.

The nature of the site has entailed great expense: the ground fell considerably, and a large bed of sand was found where the church was to be placed. The consequence was, that between 400*l.* and 500*l.* have been expended to make a good foundation, and to bring the church to a proper level, more than ought to be reckoned in ordinary sites. The works have been completed, by Mr. Holland, of Duke-street, in an excellent way, and the total cost will not exceed 4,400*l.*

THE ARMY AND NAVY CLUB COMPETITION.

In accordance with the determination of the committee, already mentioned by us, the six architects, whose plans received the greatest number of votes in the late competition, have been invited to submit fresh designs, and have agreed to do so. We give their names in alphabetical order:—Mr. G. S. Clarke (a pupil of Mr. Barry), Messrs. Fowler and Fisk, Messrs. Parnell and Smith (with whose plan the name of Count D'Orsay has been connected), Mr. H. B. Richardson, Mr. Sydney Smirke, and Mr. Tattersall.

Mr. Smirke was one of the competitors who withdrew his design before the exhibition took place.

OLD SASHES.

Fig. 1.

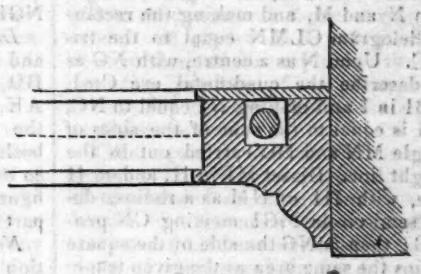


Fig. 2.

OLD SASHES AND FRAMES.

Sir,—I beg to send you two sketches of curious ancient fragments, discovered during some alterations at this place. The first is an old wood mullion of very good design, as early as the time of James I. This was found in the plastered wall surrounding the principal staircase, supposed to have been an open court. There were several windows very perfect; the walls were formed of quartering, filled with wattles and loam. The second sketch is made from one of the old sash frames, of the powder and pig-tail period. It is interesting, as it shews the extent of our improvements in this important part of our buildings. J.

Wickham Court, Kent.

GEOMETRY OF THE SQUARE.*

Case 3*rd.*—When the triangle is right-angled, as ABC (fig. 5), the sides being AB, AC, and the hypothenuse BC respectively, it is required to convert the right-angled triangle ABC into a square of equal area.

Construction.—Through C, the vertex of the triangle, draw the straight line CI parallel to the base AB, and extend it towards I as far as necessary. Bisect the base AB in L, and through L draw LD parallel to AC and meeting CI in D; then is ACDL a rectangular parallelogram equal to the triangle ABC.

Bisect CI in H, and on H as a centre, with the diameter CI, describe the semicircle CGI meeting LD, the side of the rectangle produced, in G; then is DG the side of a square which is equal in area to the rectangle ACDL. On DG describe the square DGEF, and it will be equal to the given triangle ABC, so that the conversion required by the problem has been effected.

Problem.—*To construct a square that shall be equal in area to a given quadrilateral figure; that is, to covert a given quadrilateral figure or trapezium into a square of equal area.*

Example.—Let ABCD (fig. 7) be the given trapezium or quadrilateral figure, of which the containing sides are AB, BC, CD, and DA, it is required to convert the trapezium ABCD into a square of equal area.

Construction.—Draw the diagonal BD dividing the given figure into the two triangles BAD and BCD, and through the angle A, draw the straight line AK parallel to the diagonal BD, and meeting CD produced in K; draw BK intersecting AD, the side of the trapezium, in *r*, and the triangle KBC, thus

* See page, 209, ante.

GEOMETRY OF THE SQUARE.

Fig. 5.

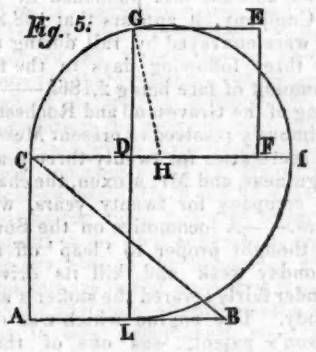


Fig. 7.

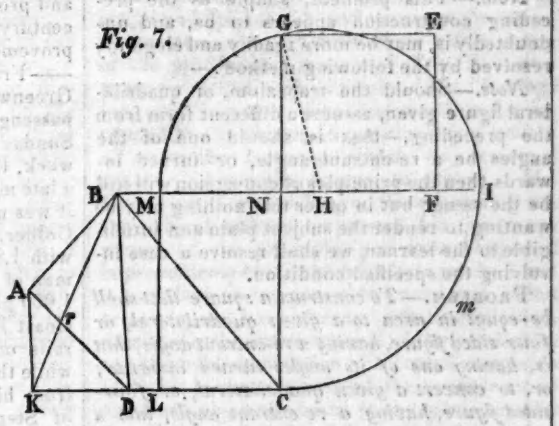
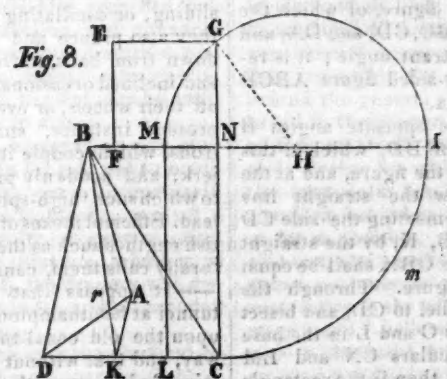


Fig. 8.



formed, will be equal to the given trapezium or quadrilateral figure ABCD.

Through B, the vertex of the triangle KBC, draw the straight line BI parallel to the base KC, and produce it towards I to any required extent. Bisect the base CK in L, and at the points C and L in the base line CK, erect the perpendiculars CN and LM, meeting the straight line BI in N and M, and making the rectangular parallelogram CLMN equal to the triangle KBC. Upon N as a centre, with NC as a radius, describe the quadrantal arc C*m*I, meeting BI in I and making NI equal to NC, so that MI is equal to the sum of the sides of the rectangle MN and NC carried out in the same straight line. Bisect MI in H, and on H as a centre, with HI or HM as a radius, describe the semi-circle MGI meeting CN produced in G; then is NG the side of the square that contains the same area as the given trapezium ABCD. Upon the side NG, as thus determined, construct the square NGEF, and that which is required by the problem is done; for the trapezium ABCD, the triangle KBC, the rectangle CNML, and the square NGEF are all equal to one another, so that the figure proposed has been converted into a square of equal area.

Demonstration.—Since, by construction, the triangles ABK and ADK stand upon the same base AK, and lie between the same parallels, AK and BD, they are equal between themselves; take away the triangle A*r*K, which is common to them both, and the remainder AB*r* is equal to the remainder KD*r*, so that the part AB*r* which is cut off the trapezium by the line BK, is equal to the part KD*r*, which is applied to it by producing the side CD to meet BK in the point K, and, consequently, the triangle KBC and the trapezium ABCD are equal.

But the rectangle CNML is equal to the triangle KBC, because, by construction, it stands on half the base CL and lies between the same parallels BI, KC, which limit the triangle; therefore, the rectangle CNML is also equal to the trapezium ABCD. And moreover, the square GEFN is equal to the same trapezium or four-sided figure ABCD; for since NG, the side of the square, is a mean proportional between NM and NI, the sides of the rectangle CNML, the rectangle and the square are equal; but the rectangle CNML has been shewn to be equal to the trapezium ABCD, consequently, the square GEFN is also equal to it, for things that are equal to the same thing are equal to one another; hence the trapezium has been converted into a square of equal area, according to the conditions of the problem.

Note.—This problem, simple as the preceding construction appears to be, and undoubtedly is, may be more readily and elegantly resolved by the following method:—

Note.—Should the trapezium, or quadrilateral figure given, assume a different form from the preceding,—that is, should one of the angles be a re-entrant angle, or turned inwards, then the principles of conversion will still be the same; but in order that nothing may be wanting to render the subject plain and intelligible to the learner, we shall resolve a case involving the specified condition.

PROBLEM.—*To construct a square that shall be equal in area to a given quadrilateral, or four-sided figure, having a re-entrant angle, that is, having one of its angles turned inwards; or, to convert a given quadrilateral, or four-sided figure, having a re-entrant angle, into a square of equal area.*

Example.—Let ABCD (fig. 8) be the given trapezium, or four-sided figure, of which the containing sides are AB, BC, CD, and DA, and the angle, BAD, a re-entrant angle; it is required to convert the four-sided figure ABCD into a square of equal area.

Construction.—Join the opposite angles B and D by the straight line BD, which in this case falls wholly without the figure, and at the re-entrant angle A, draw the straight line AK parallel to BD, and meeting the side CD in K; join the points B, K, by the straight line BK, and the triangle CBK shall be equal in area to the given figure. Through the vertex, B, draw BI parallel to CD, and bisect CK in L. At the points C and L in the base CK, erect the perpendiculars CN and LM meeting BI in N and M; then is the rectangle CNML equal to the triangle CBK. On N, as a centre, with NC as radius, describe the quadrant C*m*I, meeting BI in I, and making NI equal to NC, so that MI is equal to the two sides of the rectangle CN and MN, extended in one line. Bisect MI in H, and on H as a centre, with HI or HM as a radius, describe the semicircle MGI meeting CN produced in G; then is GN the side of the required square; on GN construct the square NGEF, and the thing required is done.

Demonstration.—Since the triangles, BAD and BKD, are constituted upon the same base, BD, and lie between the same parallels, BD and AK, they are equal to one another; take away the triangle A*r*K, which is common to them both, and the remainder AB*r* is equal to D*r*K, so that the part AB*r*, which is added to the figure by the straight line BK, is equal to the part D*r*K, which is cut off by the same line.

Note.—The remaining part of the demonstration being precisely the same as in the foregoing cases, it has been thought unnecessary to repeat it.

RAILWAY JOTTINGS.

VARIOUS plans have been noticed in THE BUILDER, for the very desirable and indeed absolutely essential means of communication between guard and engine-driver. An addition to the number, suggested by a correspondent of the *Mining Journal*, consists in the fixation of two perpendicular guide pieces to the funnel of the engine, in which shall slide, facing the driver, a metal plate painted white, with the word "stop," printed on it in black letters, and with a small chain attached, passing over a pulley near the top of the funnel, and carried within reach of the guards. In case the engine is required to be stopped, the plate should be drawn towards the top of the funnel, and kept there till noticed by the driver, which he could scarcely fail to do. The chief defect of this contrivance is, that it does not force itself so instantaneously or effectually on the notice of the driver as might often be requisite. ——A correspondent of *Jerrold's Newspaper*, speaks of a very good and simple means in use in America, for the protection of passengers' luggage, namely the labelling of each article with a copper ticket attached by a thong, while a duplicate copper ticket is handed to the owner which will constitute the only easy means of reclaiming the luggage.——It has been suggested that the sunny sides of railway embankments might be planted with vines instead of lying fallow as they now so universally do. Vineyards, especially in the counties of Kent, Gloucester, and Cambridge, are no novelty in this country, as many of our readers know, extensive vineyards having flourished and prospered here even so early as the 12th century, and without the aid of modern improvements in climate, soil, and management. ——From an account just published by the Greenwich Company, it appears that 108,861 passengers were conveyed by rail during the Sunday and three following days in the fair week, the amount of fare being 2,186*l.*——At a late meeting of the Gravesend and Rochester, it was unanimously resolved to present Messrs. Collier, the secretaries for twenty-three years, with 1,800 guineas, and Mr. Moxon, the chairman of the company for twenty years, with 1,000 guineas.——A locomotive on the South Coast line, thought proper to 'leap' off the rails on Monday week and kill its driver, while the tender fairly severed the stoker's arm from his body. The engine which was one of Stephenson's patent, was one of those curvetting and unsteady ones, which have an incorrigible trick, *as many engines have*, of sliding, or oscillating from side to side, while they also prance and rear, or swing up and down from back to front, so that they are apt and inclined occasionally to 'leap'—literally—off their wheels, or even off the rails, as in the present instance, snapping the connecting irons, which couple it with the tender, by the jerk, and suddenly producing the catastrophe to which such 'high-spirited' practices inevitably lead. Efficient means of training vicious and skittish engines such as these, as the *Times* very naturally calls them, cannot be too soon enforced. ——It appears that not only was the new tunnel at Southampton made to cross and rest upon the old canal tunnel which lately gave way, and that without the knowledge of Captain Coddington, the Government inspector, but it had been also attempted to obtain permission to recross it with sewers, which Mr. Beatty, on the part of the Railway Company, offered to "rebuild if they sank." When the existence of the old tunnel was "thrust upon Captain Coddington's notice," after the occurrence of the catastrophe, he "expressed his surprise at it," and "took a second survey of half-an-hour of the tunnell." The Dorchester company had even been forbidden, through Mr. Beatty, at their own peril, to form those sewers which had been necessarily destroyed, and which it was proposed to reconstruct. It was shewn by Mr. Hill, before the Improvement Board, that there could be no safety for the road above till the old tunnel was filled up; and the only question seems to be, why that was not done before a stone of the new tunnel was laid. "If the engineer who had planned the line of tunnel," said Mr. William Lancaster, at the same board, "could be alone punished, it would not matter how much he suffered; but, unfortunately, contractors, sub-contractors, and other guiltless persons would participate in the loss." Another subsidence has been going on in this ill-conditioned work.——On Wednesday week before last, the bridge over the Durham and Sunderland Railway, belonging to the Marquis of Londonderry's colliery at Broomside, fell down, and temporarily stopped the traffic upon the railway. Our 'great railway works' appear to be all 'going to sticks,' or stones at least, or bricks.—— The Cheltenham and Oxford bill has passed the ordeal of the Commons' committee, after nearly 170 witnesses, including all the principal engineers in England, had been examined in evidence. Efficient means are provided in the bill for the *well*-being of the water-interest in this celebrated resort of ablutionists and water-drinkers.——The contract for the erection of the railway station at Chester has been let to Mr. Brassey. It is to be finished within nine months after its commencement. The total cost will be about 90,000*l.*——The bishop of Norwich, at a recent meeting to promote "ragged schools" observed that Mr. Peto, by educating the excavators working on the railways in the county of Norfolk, had beaten the beer-shops out of the field.—— It is still resolved on to open the Newcastle and Berwick line throughout on the 18th inst., although several of the viaducts will not be finished by that time, and are to be substituted by 'sufficient temporary erections.' A 'strong wooden bridge' is also to be thrown across the Tweed at the site of the permanent bridge and partially supported by the piles for it when fixed. The way will thus, in twelve months, be opened up without intermission to railway carriages between Edinburgh, Newcastle, and the south. At the opening, on the 18th inst., however, the time distance between London and Edinburgh will be reduced to thirteen hours!——The travelling carriage of the Russian Prince Gagarin, on its way from St. Petersburgh to Vienna, was destroyed by fire on the 20th ult., on the railway called the Emperor Ferdinand's, some sparks falling upon it from the locomotive. All its contents, which included a part of the wardrobe of the prince and a large quantity of bank-notes, were entirely consumed.

ELECTRO-TELEGRAPHIC PROGRESS.

Messrs. Brett and Little have obtained an injunction against the Electro-Telegraphic Company and others using, without license, their patent percolating hydraulic battery, for the sustainment of the galvanic and electro-magnetic action, by the removal of the sulphate of zinc, as it is generated in the battery, through perforations at the bottom, into cells beneath. —— Improvements (Mapple's) have been effected in the casing and insulating of the wires, by first covering them with cotton and coating with any suitable melted material, then inclosing them in a leaden tube, filled with heated Stockholm tar and pitch, or other non-conducting material, and there kept hot while the leaden tube is reduced by rollers to a smaller or more compact diameter; after which the leaden tube is protected by winding coir-rope round it, and then passing it through a hot pitch bath, and ultimately through a trough of sand, which is well rubbed into the interstices of the rope. For still further protection in underground deposit, the whole apparatus is inclosed in a cast-iron pipe.——It seems to be on this conservative system that the wires are now being laid through the streets of Man-

chester from the Exchange to the Leeds telegraph of the Victoria station, whence that line is laid to Normanton station, through which the Manchester Exchange will be brought into electro-magnetic *rapport* with that of London, in course of two or three weeks, when the establishment of a like connection with Liverpool will be commenced without delay.—— There are now, it appears, no less than 1,575 miles of telegraph in operation throughout the United States, besides 4,974 miles more, which are already under contract, and in process of construction so as to be completed in 1848,—making, in all, 6,549 miles of telegraphic interweavement to be completed next year.

THE NATIONAL BUILDERS' GUILD.

Sir,—Permit me to lay before your readers the following suggestions for the establishment of a national society for regulating wages, supplying employment, relieving the sick, &c. during temporary illness, and for affording permanent pecuniary assistance to aged and infirm members, by a system of mutual life insurance.

The society to consist of masters and men in every department of building, whether under the direction of architects or civil engineers, and to include every description of persons engaged in decorating or furnishing buildings.

I would propose, that, in every corporate town in the kingdom, a trade council should be formed, which might consist of as many persons as there are town councillors of the corporate body; the members of this council to be elected by members of the society resident and working in the town, or whose names are registered in the books of the trade council of that town. The trade council in every corporate town would keep a book for registering the names of members, arranged under their respective trades. The town in which a member is first entered should never be changed for that of any other in which he may afterwards reside,—if he removed elsewhere, he should always be known as a member of the trade council of the town in which he was originally entered. All receipts and payments to his account would be made through the council of the town in which he was residing, to the central or metropolitan council in London, where duplicate books of every town council would be kept, and in which an account would be opened with every member of every trade council in connection with the society. The members of the society would be provided with a book by the metropolitan council, so printed and made as to prevent a forgery of it by any one. This book would contain a copy of his original entry into the society, and of his money account with it; it would also be his certificate of membership when presented at the trade council of any town in connection with the society. A member of The National Builders' Guild, in search of employment, would, as a matter of course, apply to the trade council of the town at which he had arrived, and the presenting of his book would prove him to be a member of the guild. Every working member, when seeking employment from a master member, should have the preference over others who are not members of the guild: I do not mean that there should be any thing compulsory, but simply an acknowledgment of kindly feeling on account of membership betwixt master and man. There will, of course, be rules and regulations required, and which must be so drawn up as to make it the interest of both parties to observe them.

I would propose that the metropolitan, or central trade council, should consist of a chairman and nineteen councillors, which is, I believe, the number of parliamentary members in the metropolitan districts. This council would be elected by the councillors of towns, in the same manner as they themselves were elected—that is, by voting papers, to be transmitted by post or otherwise, one-third going out of office under the same regulation as in the elections under the municipal law. In the metropolitan council would be vested the power of regulating wages, which would be binding on all masters and men in connection with the guild,—the data for these regulations would be, an annual report, in this and other matters, from the several trade councils of towns. The management of the funds of the guild would also be under their exclusive control; no sum exceeding a certain amount, or beyond a fixed period, as I have explained elsewhere, could be continued unless sanctioned by an order from the central council.

That portion of the plan of the National Builders' Guild which relates to the mutual insurance of its members, will be best undertaken by those conversant with such matters. A plan, which I believe to be somewhat similar, was established by the commercial travellers a very few years since, and is now in a most prosperous condition, and I see no reason why a similar one could not be carried out by the National Builders' Guild. My view of it is, that annuities might be granted under the following circumstances: namely, for life in case of infirmity produced by accident, or any cause incident to art, trade, &c., over which the individual had no control; infirmity from old age, to be fixed at a period rendered liable by the nature of the employment—the allowance to be in proportion to the time of life fixed upon as an old-age term; and in case of the death of the parties before the expiration of the term of old age, the immediate relative of such party to have an interest in the remainder of the term. Any break or discontinuance of the payment of the individual's subscription should not affect his claim to ultimate relief, but it would lengthen the period, or reduce the amount, in proportion to the time during which he ceased paying.

I am, Sir, &c. Henry Liddell.

Beverley Road, Hull, May, 1847.

SCENERY AND DECORATION OF THEATRES.

LIGHTING THE STAGE.

'The production of ugliness—incongruity—inharmoniousness—is little short of a crime against society. The neglect of an opportunity to set before the general eye that which is harmonious—fitting—beautiful—is only less so in degree.'—Builder page 249, *ante*.

Sir,—If I ere now entertained some little hesitation to set before the critical eye of your numerous readers that which not only I myself, but others highly competent, have been led, by experimental knowledge, to regard as both harmonious and fitting, beautiful and brilliant, in the place of what is, by comparison, inharmonious, incongruous, and ugly, in the management of the light in theatres,—the peculiar applicability of the passage just quoted from The Builder to the half-formed intention of addressing you on a subject in which much of what is either beautiful or ugly, either harmonious or discordant, may at least be capable of displaying itself, at once dispels all hesitation, and points me out the imperative line of duty in this particular instance.

Without further preface, then, I may, in the first place, remark, that amongst the many judicious suggestions proposed in the discourses of the 'Decorative Society' on the 'Scenery and Decoration of Theatres,' there is one for the production of general and harmonious as well as brilliant *effect* in scenic composition, the suggestion of which I looked for in vain while perusing the series of papers lately reported in The Builder; and it therefore lately struck me, that as the idea in question has been tested by experiment, carried out at my own suggestion, and under my own eye, though for behoof of a managerial acquaintance in the provinces, it might be well to draw particular attention to the subject now, that it may opportunely meet with a fair consideration, in coincidence with all those minutiæ, every one of which, however trifling *per se*, ought to be pointedly regarded and attended to in the production and enhancement of that entire, harmonious, beautiful, and brilliant illusion, whose effect, occasionally, even the merest trifle of neglect may be sufficient at once and wholly to dispel.

The idea in question, however, is one connected, as I have already hinted, not so much with the production of the scenic illusion itself, as with the infusion of a brilliancy, and yet a pure and chastened serenity, of general effect throughout that scenic illusion, whether it regard the scenery itself, the drapery and decoration, or the countenances and expression of the *dramatis personæ*.

I had often been struck with the classical or picturesque expression thrown over the features of even a very plain and inelegant countenance by the elevation of the artificial light, when alone reflected on it, from a point *exclusively above its level*. Let any one, for instance, place a mirror before his own face, and elevate the candle, as the only light by which it is to be seen, to various levels, higher or lower, before it; and he will at once perceive, that as the shadows come to fall *exclusively downwards*, a classical elegance and even beauty of effect will be shed over even the most rugged countenance. Of course, I do not mean that the light be elevated directly above the head, but immediately in front of it, at an angle, probably, of forty-five degrees, *so that the expression of no feature be lost*.

Then, again, I had also often admired the purity and serenity, as well as brilliancy of effect produced on colours and on scenery under the like circumstances,—an effect which every one must have observed in this peculiar mode of managing light for scenic display,—so far as regards mere colours and shades, or these with forms,—in the windows of jewellers, drapers, &c.; and,—so far as regards perspective or scenery,—in picture galleries, where, I need scarcely add, the light in general is also made to descend exclusively from above.

On the other hand, while in a theatre, and especially from the pit, I have frequently been annoyed and disgusted with the effect of the unnatural glare of light from the foot lights, particularly on the faces of those on the stage. The false and unnatural effect thus produced, every one must have remarked. Why, the very cavernous interior of the nostril of even the most beautiful countenance, which nature discreetly casts into shade, is thus explored with most unmerciful, trying, and by no means beautiful distinctness. But I need not further enlarge on those reasons which led me to endeavour to get rid altogether of foot-lights, and to substitute a more natural and graceful as well as more brilliant and effective illumination of the persons and the scenery on the stage. I consulted, or rather advised with, Mr. Murray, the able manager of the Edinburgh Theatres, on this point: but he was too much wedded to established practices, or did not accurately judge of the general effect of the proposed improvement, although he admitted that it was most natural that the whole flood of light should primarily descend from above. An opportunity occurred, however, as I have hinted in the outset, and I eagerly embraced it, although strongly dissuaded by various sceptical critics from any interference with what they insisted could not be helped or improved, what was very well as it was, what would never be submitted to either by actors or spectators, *et cetera*, and so forth. Nevertheless, I did realize my own idea, and that too successfully; and what was more, to the satisfaction both of actors and spectators; and amongst the latter, by the way, was one with whose name many of the professional readers of The Builder must be acquainted, namely, Mr. Errington, civil engineer, who happened to be attracted to the theatre in question by a course of scientific lectures, which he, amongst others, did me the honour to attend. Mr. Errington, I remember, while conversing on the subject with me, expressed his entire approval of the principle, and even suggested improvements of it, which unfortunately I had it not then in my power to carry out. That principle, as I have already virtually explained, consisted in the entire removal of the foot-lights, and the bold substitution of a central congeries of lights in the very body of the house (a small one certainly) and almost in the place usually occupied by the chandelier, with a reflector sufficiently large and powerful to turn the whole flood of light upon the stage, at about an angle of 45 degrees. A second congeries was found necessary, however, at a like elevation, but within the proscenium, or above and behind the general range of the actors' heads, to aid in the proper and uninterrupted display of the scenery on the like principle, the complete design for which display comprehended the systematic use of scenery so illuminated also from behind as to give the dioramic effect, as far as possible. The experiment was carried out, at all events, to a sufficient extent to prove, not only its practicability, but its great superiority to the usual method of lighting the stage; and I believe that nothing else is requisite to the most brilliant realization of this striking novelty in all its details, but the well-filled treasury of a metropolitan theatre.

J. E. D.

IMPURITIES OF GAS AND IMPROVEMENT OF METERS.

On Monday evening last, at the Western Literary and Scientific Institution, in Leicester-square, Mr. Defries lectured on gas meters.

He commenced by contrasting wet and dry meters, and proceeded to shew that, in point of value, the dry meter was the best, as it was not affected by evaporation, condensation, or any change of weather. He argued, that it was a quality in gas to take up in its course any vapour or fluid with which it came in contact; and thus, when acted upon by the weather, the wet meter became, in all material points, an inefficient apparatus. It was almost needless to observe, that when gas was disturbed, a flickering or unsteadiness of the light followed. Another cause of injury to meters was the bad gas that was so extensively supplied; and while he admitted that some London companies furnished as good as could be made, he regretted, for the interests of the public, that a great deal was so strongly impregnated with ammonia and sulphuretted hydrogen, that the machinery shortly became so incrusted with the injurious matter, that not only was certainty of action out of the question, but the metres became useless, and ceased altogether to perform their registration. He would here, by way of digression, observe, that it had long been a matter of unqualified surprise to him, that the practice so invariably pursued in Scotland had not been more generally adopted here. It was notorious, that gas was even used in the bedrooms in Scotland, and that not so much as a tallow-chandler's could be found. When, therefore, he reminded the meeting that the gas thus used was of the purest and most inoffensive character, and when he also reminded them of the great resources of British companies, and of the capability of the British public to support them, he was sure that the meeting would share in the surprise he felt, that the practice had not been more generally adopted here. Gas, independently of being the clearest and most condensed light, was unquestionably the cheapest, and, in point of trouble or inconvenience, was of no account to the consumer, when an honest company supplied good gas, and an efficient meter-maker furnished a proper apparatus. In order to establish his position as to the capability of gas taking up any fluid in its course, the lecturer shewed Lowes's napthalized light, and contended that there was plenty of gas as good as that in use in England.

He then proceeded to describe the water meter, but he would not detail the inefficiency of it, as he considered enough had been said on that score not only by the press in general, but in the paper read by Mr. Croll at the Institution of Civil Engineers, which opened the eyes of the public to the means whereby gas could be obtained without paying for it, and the gas companies defrauded.

The lecturer then proceeded to explain the meters which had been patented during the last twenty-four years, excepting those made by Mr. Clegg and Mr. Hutchinson, for which the means had not been afforded him. And he then went on to speak of the dry meter of which he was the inventor and patentee, and urged that it was so contrived that no gas could affect it injuriously.

By an alteration in the valve in making it from a 3 D. slide to a rotary valve, the gas passed through its proper channel without escaping to the upper part of the meter, for when the gas thus escaped amidst the machinery, corrosion inevitably followed. This improved valve, which he called his new protective rotary valve, in conjunction with an alloy of metal of which he constructed certain portions of the geurage, comprised the essential points of improvement.

The lecturer then proceeded to describe his meter as being of a circular form divided into three rhomboidal compartments and one superior chamber. Each of the three rhomboidal compartments is subdivided into two angular compartments, by a perpendicular partition formed of four metallic angular plates, united at their edges and also at the centre by a skin of leather properly prepared. The meter thus contains six chambers in the lower portion of the apparatus not communicating with each other, but all communicating through a rotary valve with the upper portion. Each of these partitions, the chamber being filled with gas, works backwards and forwards, alternately bulging out or receding at its centre with a perpendicular shaft. The three perpendicular shafts pass through as many stuffing boxes into the superior chamber, where each shaft communicating by two rods with the axle of the common tangent of one, and transmitting to it the alternate motion of its own partition, induces by combination a rotary motion in an upright spindle. The interior compartments are the parts employed in the measurement of the gas, while the superior chamber receives the gas so measured. In the superior chamber is placed a rotary valve, the seat of which is divided into six compartments, to supply alternately the three partitions. The valve is arranged over the three pairs of measuring compartments in such a manner that the centre or interior part of the valve is alternately connected with the part on either side of the partition; and the pressure of gas entering one side of the partition discharges the contents of its fellow compartment into the common chamber above, from which the measured gas passes to the burners. Above the spindle of the tangent a perpendicular shaft is connected with a horizontal wheel, which gives the motion to the index train. An arrangement of wheels similar to those used in clock-work, registering on the drum five feet of gas, measures on the first dial 1,000 cubic feet, on the second 10,000, and on the third 100,000; while, in order to shew the nicety of completion, the meter before them indicated the sixtieth part of one-tenth of a foot.

SOCIETY OF ARTS.

DISTRIBUTION OF PRIZES.

We rejoice to find that those judicious and efficient rules and requisites pointed out by the Royal and exalted but most practical and active President of the Society of Arts for the "development and application of the principles of taste along with those of science,—for the promotion, in short, of the union of the beautiful with the useful in our arts and manufactures," as expressed in the report of its proceedings, read on Thursday last, in presence of the President himself, and of a still more numerous and brilliant assemblage than heretofore, are already giving birth to their legitimate issue in "a greatly extended sphere of practical usefulness, and a prosperity, public interest, and substantial revenue, greatly increased beyond all previous experience."

His Royal Highness, the President, after a graceful expression of his satisfaction with the result of what was thus, in truth, due to "that new direction given by himself to the labours of the Society" which he fosters, presented the numerous medals and other prizes with the most gracious kindness of demeanour, not only listening with unwearied patience to the dry details which some enthusiasts, in the merits of their own inventions, spun out to rather a tedious length, but discoursing with the various successful inventors, and inquisitively examining every thing with the least pretension to either beauty or utility.

Amongst the prizes were medals to an Italian and a Swedish inventor; and amongst the crowd of spectators, were recognised the Earl of Dartmouth, Baron Goldsmid, Sir Edward Codrington, Sir W. Ross, Sir J. Boilleau, &c.

On the eve of going to press, we have not time at present further to particularize the proceedings of this interesting meeting.

Burning of Hanwell Bridge.—A subscriber writes thus:—Perhaps the following circumstance may give some clue to the cause of this disaster. It is not long since that the grass in the Green Park was separated from the gravel walk, opposite Lord Salisbury's house, by a single wooden rail, the joints of which at each post were covered with a piece of iron hooping. Going down this walk many years back, the rail suddenly burst into a flame and continued so till burnt through, when it fell on the ground. On examining the cause of apparently so strange a fire, I found the wood underneath the iron hoop was decayed, and had become touchwood, which the heat of the sun, operating on the iron, had kindled into a flame. When wood and iron are so combined, as in the bridge in question, may not the same cause have produced the same effect.

FINAL RESOLVE OF GOVERNMENT ON WELLINGTON STATUE QUESTION.

In reply to questions put by Mr. C. Berkeley, in the Commons, on the 4th inst., Lord Morpeth assured the House, that the Government have advised her Majesty to give authority for the removal of the statue from the arch; and that the Government have signified that decision to the committee. The committee replied that they did not think a sufficient portion of the scaffolding had been removed. But they now state that a sufficient portion has been removed. The Government, however, are still of opinion, that the effect is unfavourable, both for the statue and the arch, and is not such as to do credit to a memorial in honour of the Duke of Wellington. As to what are the views of the committee, and whether they have sufficient funds for the removal, his lordship professed entire ignorance. All he knows is, that they were willing to remove the statue, and that they have now intimated their intention of doing so. The artist has been requested to prepare a pedestal; a site has not been found; but as soon as the pedestal is completed, the Government will see the removal effected. Further, her Majesty has signified her pleasure that, when the House shall be pleased to vote the sum necessary for the completion of the arch, any decorations which may still have to be added, should be illustrative of the achievements of the Duke of Wellington, and should be such as may serve to mark the sense which the country entertains of his exploits and his deserts. In reply to a question by Lord J. Manners, his lordship added that if estimates of a satisfactory plan for the pedestal could be got before the close of the present session, that estimate and plan would be produced before the works were commenced.

Relative to a site for the statue, our correspondent, "A Londoner," says,—"At the junction of the Brompton and Hammersmith roads, near the end of Sloane-street, there is a triangular clump of old houses, which, if pulled down and the cab-stand removed to a more suitable locality, would afford a very good position for 'His Grace,' besides giving the opportunity of widening the roadway, which is necessary there."

USE OF GLASS.

Sir,—As your publication has frequently contained suggestions for using glass for many purposes to which it is not at present applied, I beg to add a few words on the subject, in the hopes of bringing it more generally into use. I think glass might be very usefully substituted for metal to form the roofs of verandas, thus obviating the darkening of the rooms, which is caused by the metal; the only proviso being that the glass for this and such like purposes must be sufficiently stout to weather another 1st of August. For coal-plates, area-gratings, or the covering of cellars, where much light is required, and the top is to be used as a yard or passage, *thick*, *rough plate-glass* might be advantageously used; also for the risers, and, in some cases, even the treads of stairs, where light is required in the basement, or to stairs underneath. For any of these purposes, if air as well as light is required, the glass might of course be perforated, as stout, rough plate-glass is very strong, and will bear a very considerable weight.

Glass has often been recommended for the purpose of conveying gas, water, and electric telegraph wires; and I am surprised that it has not come into general use for these purposes, particularly for water, as being so very cleanly, and not subject to corosion *to any extent*. I think the black bottle-glass best adapted for these appliances.

Glass pipes might also be used in houses for laying on water, and gas, and for house-drains and traps, as glass is easily bent by the application of the heat of a spirit-lamp, and the green glass possesses great strength. The bottoms of sewers might also be lined with glass. Cisterns, meat-safes, and shelves for larders, might be formed of this useful material with good effect. Glass tables and side-boards, wash-hand stands, sinks, taps, and even glass doors, where light is requisite, would form useful and elegant objects.

There are an immense number of purposes

connected with our domestic economy in which glass would be very useful: thus, spoons, dishes, basins, and numerous culinary utensils might be formed of this material.

Yours truly, B. A.

P.S. I should mention, that for the above, and indeed every other purpose, brittle glass should be *carefully eschewed.*

SINGULAR TRANSIT OF LIGHTNING THROUGH A RANGE OF BUILDINGS.

The details whence the following particulars are gleaned appeared in the *Manchester Express*, and seem to merit a more general circulation through the press than they appear to have yet attained.

During the occurrence of a storm at Manchester a few weeks since, a very loud peal of thunder broke over the mill of Messrs. Side-bottom, and almost instantly a vivid flash of lightning from the north-east struck the chimney, which stands on the margin of the Etherow, and is 118 feet in height, of a square form, and very strongly built. To the height of 40 feet it is of stone, and two to three feet thick, while the upper part, which is of brick, diminishes in thickness upwards from 18 inches to 9. There was no conducting rod—nothing to break the shock, and the stalk has been most seriously damaged. The top was struck on two sides with such force as to open a chasm two or three yards in extent, and some of the dislodged bricks were projected to the opposite side of the river, a distance of 20 yards. The electric stream, as it descended, made another large cavity a dozen yards from the top, and then descended, without further injury, to the base, on one side of which the solid stonework has been thrust outwards in a very remarkable manner, but, apparently, without making any fissure. Some of the stonework externally, however, has been fractured as if by a battering ram; and it is evident that nothing but the strength of the shaft saved it from almost total prostration. Connected with the chimney, there are four underground flues, and through every one of these the electric current rushed. One is 40 yards in length, and the current was strong enough to burst open the doors of the fire-place, knock down the casings of the ash-pit, and project the fire and smoke into the smithy. Another has its exit through a wooden funnel, reared against the wall, and the current, in rushing through, begrimed the face of the wall with soot nearly to the top. In its progress to the chimney, the fluid passed the end of one portion of the mill six stories high, and twenty yards long. It entered at a window on the second story, partly open, and also at one on the fourth story, knocking down two females, and igniting the loose cotton "fly" which adhered to the gas pipes, as well as that in the waste can. Through this mill, in which all the hands (900 in all) were at work, it passed without injuring a single person, and dashed against the warehouse in front of the weaving shed, and 200 yards from the point of entrance. How it entered the warehouse is unknown; for not a pane of glass has been broken, nor has any of the stonework been injured. From the warehouse it seems to have made its way through the weaving shed again, and then to have struck a row of cottages connected with the shed. In one of them the fluid passed between two persons and up the chimney without injuring them.

Sir John Rennie's Conversazione.—The president of the Institution of Civil Engineers gave his second *soirée* on the 5th inst., and the number of visitors was very great. We would suggest to Sir John, in the event of a similar meeting hereafter, that some better arrangement should be made for the recovery of hats and coats than was found on this occasion, when we fought in a dense crowd for five and thirty minutes, and were ultimately but too happy to escape without the object of our search, by means of the kitchen-stairs and the area-gate.

Irish Marble.—A discovery of green-veined Irish marble has been unexpectedly made in quarrying for freestone to repair the Diamond of Raphoe. The quarry opened is said to consist of marble of a superior description.

Correspondence.

DISTRICT SURVEYORS' FEES.

Sir,—With reference to the mode of fixing district surveyors' fees, suggested by L. H. I. in your valuable journal, it must be obvious to all concerned in building operations, that such a regulation would never work well, for this reason, that instead of the poor man reaping the benefit, it would be the builder who could afford to employ a sufficient number of workmen to complete the job within the seven days. Now, supposing a poor builder is employed to build an addition to a fourth-rate house, he not having the means to set on a sufficient number of men, or, perhaps, in consequence of unfavourable weather, or other unforseen circumstances, during the progress of the building, it might be utterly impossible to complete the addition within the twenty-one days; the result would be that the district surveyor would claim, according to your correspondent's scale, the exorbitant and inconsistent fee of two guineas, whereas, by the present arrangement, he could only claim a fee of ten shillings.

Your correspondent states, that he thinks the district surveyor would only find it necessary to make one survey in jobs which would take but seven days in completing, and that the fee of ten shillings would compensate him for his trouble; but I must beg to differ with him on that point. It would be necessary, in the first place, on the receipt of a notice, to inspect the works, and to cause all the rules and directions of the Act to be strictly observed; and, secondly, to attend on the seventh day for the purpose of seeing if the work was complete and to regulate his fee, which would be, after two surveys at least, the paltry sum of ten shillings.—I remain, Sir, &c.

A Constant Reader.

Miscellanea.

Institution of Civil Engineers.—June 1st. The paper read was "An account of the iron barque *Josephine*," of Liverpool, by Captain Masters, who commanded her in the voyages she has made. The subject of iron vessels is one of great importance, and the use of that material in naval architecture has been steadily progressing since it was introduced for sea going vessels by Mr. Manby, in the steamer named after him in 1829, and which was the only vessel that ever conveyed a cargo direct between London and Paris without trans-shipment. Sanguine hopes had been entertained of introducing iron for vessels of war; but it appears from the partial accounts that have been made public of the results of the experiments at Woolwich, and elsewhere, that the effects of cannon shot on iron vessels is more destructive than upon timber. The paper read was a plain and somewhat dry specification of the construction of the vessel, which will, however, when printed *in extenso* in the minutes of proceedings, be found useful. Iron ships have generally been found to get very foul. The *Josephine* was, however, paid with various compositions as experiments; that which succeeded best was: 1 barrel of varnish, 2¼ cwts. of best tallow, 40 lbs. of black lead, 7 lbs. of brimstone, 70 lbs. of arsenic. This being applied hot, the iron having been previously warmed and paid with boiled linseed oil, appeared to have prevented foulness; as after her voyages there was little weed or grass, and scarcely any barnacles, but very slight oxidation took place, and that only where the composition had been rubbed off. They were as much annoyed by rats as in a timber ship, nor could they be destroyed by any of the means adopted.

All Saints' Church, Lambeth Marsh.—This church, already described in our pages, was consecrated on Monday last by the Bishop of Winchester. The lofty campanile and spire is about 80 feet from the body of the church, in Lambeth Marsh, at the corner of York-street. The church is calculated to seat 1,500 persons. The architect was Mr. W. Rogers; the land on which the church is built cost 2,400*l.*; the building 6,512*l.*; the furnishing (exclusive of the organ, &c. nearly 800*l.*

Look to Your Coin Deposits.—The 'plundering of posterity' by an inverted 'Antiquary' (see 'Notes') is not a solitary case it seems, the like having lately been 'done' near Stranraer: mere 'rubbings' of the 'brass' won't satisfy these new Archæologists.

Projected Works.—Tenders have been called for by advertisement for the erection of a battery and buildings near Tilbury Fort; new buildings at the Hackney Union Workhouse; walls and entrances to, and excavation of, the Wet Dock and half-tide basin at Sunderland; Framlingham's Hospital at King's Lynn; coal-stores, with iron roofs, &c., of an area of 12,000 feet, with lay bye adjoining, at Stepney; additions to, and alterations of, the Farnham and Aldershot Workhouses; a stable, byre, and cattle-sheds at Offerton; repairs to roof of Coddenham Church; also for widening, sloughing, and bottoming the Keyingham level drain, Hedon; making a cylindrical sewer of 154 yards in length, at Cambridge; and 2,495 feet of sewer in St. Marylebone; conveying water to Kimbolton Castle with about 4,000 feet of 1¼ inch strong lead piping, stop cocks, joints, &c., exchanging old pipes; and for the execution of the whole works on 16 miles and 7¾ miles of the Reading, Guildford, and Riegate railway.

The Bill of Health.—The metropolis has sent up no less than forty-six petitions, praying to be included in the operation of the bill. Liverpool has presented six petitions in favour of it; Hull six, Newcastle-on-Tyne five, and sixty-six other cities and towns three, two, and one each, making a total of 147 petitions in favour of the bill. Cork has petitioned for its extension to Ireland. 'The ancient order of Druids' have shewed an enlightened interest in its favour, and 'it is expected that the sanitary condition of the queendom will occupy much of the attention' of a meeting of their delegates at Hull, where, by the way, 'everybody has in some capacity or other petitioned in favour of Lord Morpeth's bill.—The town-council has petitioned—the guardians of the poor have petitioned—the clergy and ministers of the gospel have petitioned, six hundred physicians, magistrates, merchants, and respectable householders have petitioned—and this week a public meeting, held in the Town-hall, agreed unanimously to petition in favour of the amended bill.' Go thou and do likewise may we say to 'everybody' in every town requiring thorough cleansing,—and where is the town that can conscientiously say that it is even now either 'pure and undefiled,' or 'without reproach.'

Increase of Travellers leads to Diminution of Fares.—Already we have 10,000 miles of railway made, making, or sanctioned, superseding more or less than 25,000 miles of turnpike roads which exist in England and Wales. As railways have spread, travellers have increased in number, and fares have been diminished. In 1845, the London and Birmingham conveyed more than treble the number of passengers over twice the number of miles, for less than double the amount received in 1839:—Half year ending June, 1839 — passengers, 267,144; miles, 17,391,035; receipts, 270,241*l.*:—ditto, 1845, passengers, 156,904; miles, 38,758,260; receipts, 447,190*l.*—*Sidney's Speed on Railways.*

Provincial Archæological Associations.—We mentioned last week the meeting of two such societies. We may add, that the Cambrian Archæological Association will meet in Aberystwith in September, under the presidency of Sir S. R. Glynne, Bart. Papers are in preparation on the following subjects:—The Local Antiquities of Aberystwyth; the Roman Remains in Merionethshire and Montgomeryshire; History and Architecture of Strata Florida Abbey; and State of the Druidic Religion in Britain during the residence of the Romans.

Archæological Institute.—At a meeting of the Institute on Friday, the 4th, Mr. Winston read a very interesting paper on the difference of style observable in ancient painted glass, which was amply illustrated by drawings and specimens of glass. Mr. Winston, if we mistake not, is the author of a work on the subject, recently published by Parker, of Oxford. He evidently understands it well.

Mr. Weale, the architectural publisher, has had a gold medal sent him by the King of the Belgians, as a mark of royal approbation of the service he has rendered by bringing out various works on engineering, both civil and military.

Enlarging University College Hospital.—On Saturday the erection of the north wing to this hospital was completed at a cost of 5,000*l.*

TENDERS

Delivered for erecting baths and laundries, Orange-street, St. Martin-in-the-Fields. Mr. Baly, engineer.

Cooper and Davies.....	£8,539
Jay	7,989
Hicks	7,700
Haward and Nixon	7,487
Pollock and Mc Lennard ..	7,017
Curtis	6,994
Patrick	6,930
Rigby.....(accepted)..	6,890

A tender was received from Messrs. Piper after the business was ended, and, therefore, was not opened.

MEETINGS OF SCIENTIFIC BODIES

During the ensuing Week.

MONDAY, June 14.—Institute of British Architects, 16, Grosvenor-street, 8 P.M.

TUESDAY, 15.—Institution of Civil Engineers, 25, Great George-street, 8 P.M.

WEDNESDAY, 16.—Architectural Association.

THURSDAY, 17.—Royal Society, Somerset House, 8½ P.M.; Society of Antiquaries, Somerset House, 8 P.M.

TO CORRESPONDENTS.

"*One who did not compete.*"—Will find in our present number the cause of his misconception.

"*J. S.*"—Employ a surveyor, who will send in a proper claim.

"*R. R.*" (Newcastle).—The notice was in type (taken from local paper) before our correspondent's slip arrived.

"*C. H.*"—We do not know.

"*B. B.*"—The *Mercury* did not reach us. We hope to hear from our correspondent.

"*Alpha.*"—The open joints may be filled up with slips of deal.

"*A. B.*"—In the common acceptation of the words it is but a "two story house." Under the Buildings Act every story is counted.

Received.—"H. M." (Uxbridge), "A Subscriber," "General H." "J. W." (Glasgow), "C. P." "Editor of *Iris*," "W. S." "Constant Reader," "A Builder," "A Competitor," "Junius," "J. D." "Practical Builder," "Messrs. W." "J. F." "H. B." "J. S." "T. P." (Thanks).

ADVERTISEMENTS.

T. ADAMS (from Byron and Co.), late S. Dare, MAHOGANY and TIMBER MERCHANT, Bermondsey New Road, near the Bricklayers' Arms. SEASONED FLOORING, MATCH-BOARDING FIT FOR IMMEDIATE USE, and MOULDINGS prepared by machinery, Cut Deals and Scantling of every dimension, Mahogany, Cedar, Rosewood, Wainscot, Elm Beech, Oak, &c., in planks, boards, veneers, and logs; Pantile, Oak, and Fir Laths; Wheelwrights' Goods. All sawn and prepared goods delivered free of expense (except timber). Sawing charged at mill prices. Very extensive Drying Sheds.

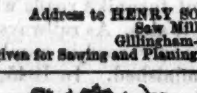
MUIR'S PATENT PLANING MACHINE.

SAW MILLS, GILLINGHAM-STREET, PIMLICO.

TIMBER of any Size, PLANK, DEALS, and BATTENS, &c. Sawn on the most approved principle, Boards, &c., Prepared, Matched, and Grooved, by Muir's Patent Machinery. The Mills have all the advantages of navigation and water-carriage, being connected with the Thames by the Grosvenor Canal. Goods fetched from the docks and carted home free of charge.

Address to HENRY SOUTHAM,
Saw Mills,
Gillingham-street, Pimlico.

N.B. Estimates given for Sawing and Planing.



TIMBER AND DEAL SAWING AND PLANING MILLS,
Belvedere-road, Lambeth, near Waterloo-bridge.

THE GENERAL WOOD CUTTING COMPANY continue to receive the most satisfactory assurances from all who have given their improved machinery a trial, that there is no method of preparing floor-boards, matched linings skirtings, &c., by which accuracy, dispatch, and economy of material are so certainly obtained. In shooting, or grooving and tonguing a board (although curved), the machine follows the edge, removing no more than the skin of the wood, and by the use of a peculiar saw for deep cutting, the board comes off with a perfect surface, thus obviating the necessity of reducing the thickness in order to plane out the hollows. The Company being neither builders nor timber merchants, unconnected with any trade but that of sawing and planing, and depending solely on the public for a moderate interest on their capital, are determined, by an assiduous attention to the interests of their customers, both as regards workmanship and general business arrangements, to merit a continuance of their support.

WOOD THOROUGHLY SEASONED IN DAYS INSTEAD OF YEARS BY DAVISON AND SYMINGTON'S PATENTED PROCESS.

THE Patent Desiccating Company beg to inform Architects, Builders, Cabinet Makers, Coach Builders, Ship Builders, and others, that their establishment (for seasoning, sawing, and planing wood), known as the Grand Surrey Mills, immediately adjoining the Commercial and East Country Docks, Rotherhithe, has commenced working. The sawing and planing will be done at the usual charges, and in the best possible manner. The new process of seasoning ensures the entire removal of moisture, hardens the gums, prevents further shrinkage (no matter how warm the temperature or hot the climate), strengthens the fibre, thus giving greater rigidity and compactness to the material, all of essential importance for floorboards, doors, shutters, and similar work. For licences to work the patent, scale of prices, or any further information, address, post-paid, or apply to W. H. TANQUERAY, Secretary, at the temporary offices of the Company, 26, New Broad-street, City.

SIR W. BURNETT'S PATENT for preventing the Decay of Timber, Canvas, and of all Vegetable and Animal Substances.

This process has long been in extensive use in her Majesty's Dockyards.—Vide Parliamentary Debate, April 13, 1847. It hardens and improves the texture of wood without injuring its elasticity, and renders it much less inflammable, and entirely so when prepared expressly for the purpose.

Licences granted to noblemen and gentlemen to use the preparation, and to contractors and others for the purposes of trade.

Hydraulic Apparatus and Tanks at the principal station, Millwall, Poplar. Square-rigged vessels can lay alongside the premises.

When the quantity of timber to be prepared is large, special contracts will be entered into on advantageous terms.

A liberal trade discount allowed to Builders, Sailmakers, and others introducing business.

Further information may be obtained and specimens of creosote application to the Secretary, at the Offices, 33, King William-Street, London-bridge.

PREPARED FLOORING BOARDS.

AT REDUCED PRICES.

ALWAYS on SALE, a Large Assortment of DRY PREPARED FLOORING BOARDS, and MATCHED BOARDING of all sorts, planed to a parallel width and thickness, from ¼ inch to 1¼ inch thick. TIMBER, DEALS, OAK PLANKS, SCANTLINGS, SASH SILLS, &c.

Apply at W. CLEAVE'S Timber Yard, Wilton-road, Pimlico (late C. Moore and Son), and Great Smith-street, Westminster.

ALWAYS ON SALE at A. ROSLING'S, SOUTHWARK-BRIDGE-WHARF, BANKSIDE, at Old-Barge-Wharf, Upper Ground-street, Blackfriars, a large, very general, and well-seasoned stock of all kinds of Prepared Floor and Match Boarding, planed to a parallel breadth and thickness, fit for immediate use; also a great variety of machine-prepared mouldings, very accurately finished.

A. R., in calling the attention of builders and consumers, confidently presumes on being able to supply them on such terms as will ensure and merit their favours, &c.

DUTY OFF ORNAMENTAL WINDOW GLASS.

CHARLES LONG begs to inform his Friends and the Public, that he can now supply Ornamental Glass from 1s. 2d. per foot superficial; and borders from 9d. per foot run; and having just built two of the largest kilns in London, is enabled to execute extensive orders with unprecedented dispatch.—1, King-street, Portman-square.—Terms, Cash only.

THOS. MILLINGTON, 87, Bishopsgate-street Without, has a large Stock of Crown Glass on hand of the following sizes:—10 by 8, 9 by 7, 8 by 6, at 2d. per foot. Every description of Window Glass.

FOREIGN WINDOW GLASS, superior to English, 16 ounces to the foot, suitable for general purposes, in cases of 200 feet, for 42s., or about 2½d. per foot, in large dimensions; smaller do., in 100 feet cases, at 2d. per foot. No less than a case can be had at these prices, and the order must be accompanied with a remittance.—THOS. MILLINGTON, 87, Bishopsgate-street Without.

COLOURED WINDOW GLASS, equal to the Ancient.

	s.	d.
Ruby in Sheets, a splendid colour, per foot	2	3d.
Green.....	1	3
Blue.....	1	0
Purple.....	1	0

Glass Engraved to any Design.—THOS. MILLINGTON, 87, Bishopsgate-street Without.

EMBOSSED GLASS.

EDWARDS and PELL, 15, Southampton-street, Strand, Embossers, and Ornamental Glass Painters, are prepared to execute every description of Work in the best style and on the lowest terms: Embossed Borders from 3d. per foot run. Architects and Builders are respectfully solicited to inspect the patterns which are always on view, and will be found equal to any in London. As the work is done on the premises, EDWARDS and PELL can guarantee its being properly executed.

TO THE PLATE GLASS TRADE, ARCHITECTS, AND BUILDERS.

THE Best House in London, for Plate Glass is the East London Plate and Sheet Glass Company, Leman-street, Goodman's-fields; the brilliancy, quality, and colour of our Glass is unrivalled by any other company. All orders to be addressed to Mr. B. MOSS, Leman-street, Goodman's-fields.

N.B. Rough Plate Glass for Skylights and Flooring.

SOHO PLATE GLASS WAREHOUSE, 26, SOHO SQUARE.—A. GOSLETT begs to inform Builders and the Trade generally, that he is prepared to contract for the supply of any quantity of Belgian 21 and 16 oz. Sheet Glass, either cut to sizes or in 100 and 200 feet cases, delivered free in London. Having a large stock on consignment at his Warehouse, he begs the favor of an inspection; he has also just received a few cases of very fine ruby and other coloured sheet glass at very low prices.

SOHO PLATE GLASS WAREHOUSE, 26, SOHO-SQUARE, depot for the sale of the PLATE GLASS manufactured by the St. Gobain and St. Quirin and Cirey Companies, Paris. The attention of Architects, Builders, and the Trade generally is particularly requested to this article, which stands UNRIVALLED FOR BRILLIANCY OF COLOUR, superiority of substance and polish, and possesses almost faultless quality. This Plate Glass can be procured of any dimensions.—Applications for samples, lists of prices, and all further particulars, to be addressed to ALFRED GOSLETT, Agent, 26, Soho-square.

THE UNION PLATE GLASS Company beg to call the attention of Architects, Builders, and the Trade generally to their extensive stock of Glass, which stands unrivalled for colour and quality; and having considerably enlarged their Manufactory, are now enabled to execute orders to any extent with the greatest despatch.

N.B. Rough Plate Glass supplied, one-fourth, three-eighth, one-half, and three-quarter-inch thick.

H. CHRISTIE, Agent, 29, Hatton-garden, Holborn.

TO PLUMBERS, PAINTERS, AND GLAZIERS.

CROWN GLASS, in Crates of Eighteen Tables, at the following low prices, for ready money:—

		£.	s.	d.	
Crown Glass cut to size from one foot upwards, at 3d. per foot.	Thirds	4	4	0	Squares of Small Crown Glass, at 1d. 1½d., 2d. and 2½d. per foot.
	Fourths	3	10	0	
	C.C.	2	8	0	
	C.C.C.....	2	0	0	

SHEET GLASS of all descriptions equally low.—White Lead, Oil, Turps, Colours, and Varnishes, at WILLIAM FREDERICK FENTON'S Window Glass, Lead, Oil, and Colour Warehouse, 26, West Smithfield, London.

TO THE BUILDING WORLD.

H. BANKS, Manufacturer of Shop Fronts, Sashes and Frames, and Joiner to the Trade, 73, Bethnal-green-road, London. Parties engaged in building will find the charges at this Establishment cheaper than any other house in London. A full list of prices forwarded by return of post to any part of the country.

N.B. Glazed goods securely packed for the country.

CHAS. WM. WATERLOW,

MANUFACTURER

of Sashes and Frames, and Joiner to the Trade, 131, Bunhill-row, Finsbury-square.—Well-seasoned materials, superior workmanship, lowest prices.—Upwards of 400 DOORS, and a large variety of Sashes and Frames, always on sale. Glazed goods securely packed for the country. Steam-struck Mouldings in any quantity.—N.B. This Establishment is worth the notice of all engaged in building.

SHOP FRONTS, SASHES AND FRAMES, DOORS, &c. MADE FOR THE TRADE.

JOHNSON and PASK,

1, Amwell-street, Clerkenwell, near the New River Head,

Beg to inform the Trade, and the Building Public in general, that they continue to manufacture Sashes and Frames, Shop Fronts, Doors, and all other kinds of Joiners' work, on the lowest possible scale of prices. All kinds of Wainscot and Mahogany work done in the very best manner; French polished, and carefully packed for the country.—A full list of prices forwarded by return of post, to any part of the country.

FIRE BRICKS.—WARD & HART, Honduras Wharf, Bankside, Manufacturers and Exporters of every sort of Fire Bricks, Lumps, Tiles, Clay, &c. Railway, Gas Companies, Engineers, Shippers, and all large buyers, supplied from ships from the Manufactories direct, at the lowest prices. A large Stock of every quality always on hand at the Wharf as above. Goods made to pattern at a short notice. Patent Corn Drying Malting Tiles. Lime, Sand, Gravel, Bricks, and Tiles, of every description.

PLASTER of PARIS of the very best quality, Manufactured and Sold by WRIGHT and Co., Somerset Wharf, 3, Upper Ground-street, Blackfriars.

LIME AND CEMENT WHARFS.—Grey-stone, Flame-burnt, and Plasterers' Lime, Cement, Sand, Bricks, Tiles, Chimney-pots, Fire-bricks, Lumps, Flue-pipes, and other Building Materials, may be obtained, on the best and most reasonable terms, of Messrs. ROSHER, at the following Wharfs:—Albion Wharf, Holland-street, Blackfriars; Millbank-street, Westminster; Lime Kilns, Limehouse; and Kingsland-basin, Kingsland-road.—Ground Lime for Concrete.

CHEAP ROMAN CEMENT is sold in Casks that will not contain Five Bushels, even by some manufacturers of a very respectable name. Consumers should see that the standard size cask is 29 inches long by 17½ across the head, outside measure. Any workman with a rule in his pocket can ascertain this.

ATKINSON'S CEMENT.—WILLIAM WOOD, Jun., Manufacturer of Roman, Portland, and Parker Cement, Blue and White Lias Lime Works, CHURCH-STREET, ROTHERHITHE, London, Sole Consignee of Atkinson's Cement.

BATHSIDE CEMENT WORKS, established to supply a genuine quality of ROMAN CEMENT. THOS. JNO. CROGGON, Factor, 8, Laurence Pountney Hill, Cannon-street, London. Depots:—Three Cranes Wharf, 69, Upper Thames-street; St. George's Wharf, Upper Belgrave-place, Pimlico; Burton's Wharf, Commercial-road, Lambeth; Railway Wharf, Greenwich.

N.B. Plaster of Paris and Bricks at reasonable prices.

PORTLAND CEMENT is the only Cement for external purposes which requires no painting or colouring, does not vegetate or turn green in damp situations, and is not acted upon by frost.

Being perfectly hydraulic, it is the best cement to use for building and lining reservoirs, baths, cisterns, fishponds, &c. &c.

Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster.

KEENE'S PATENT MARBLE CEMENT forms an exceedingly hard and indestructible Stucco, which may either be prepared for paint, or finished in imitation of stone, by the addition of Portland or other stone dust.

It is a cheap and efficient substitute in place of wood for skirting, architrave, and other mouldings, in its application for which purposes it checks the progress of Fire and the attacks of Vermin.

Patentees and sole Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster, and Seel-street, Liverpool.

GREAVES'S LIAS LIME and CEMENT.

RUTTY and VEREY, 2, South Wharf, Paddington.

LIAS LIME, as Mortar, is especially adapted for sewers, dock-walls, hydraulic, railway, and other works; its adhesive qualities being superior to Roman Cement.

As CONCRETE, it has more power than any other Cement or Lime, as it forms a solid mass—sets as firm as a rock under water—using one bushel of lime to eight of gravel.

LIAS CEMENT is easily worked of a beautiful stone colour (similar to Portland stone), does not vegetate or crack, hardens by exposure to the atmosphere, and is well adapted for modelling and casting.

Metallic Sand on hand.

MARTIN'S FIRE-PROOF AND ORNAMENTAL CEMENT.

CAUTION.—Messrs. STEVENS and SON, Patentees, beg to caution their friends and the trade generally against confounding this invaluable Cement with others, erroneously said to be of the same description. S. and S. pledge themselves that MARTIN'S CEMENT is totally dissimilar in composition and manufacture from every other, and being a neutral compound, is not only free from chemical agency upon any substance with which it may come in contact, but completely resists the action of the strongest acids. They feel it a duty to direct attention to the following properties, which it exclusively possesses:—

1. It rapidly acquires the hardness of stone.

2. Unlike other internal cements, its hardness is uniform throughout its entire thickness.

3. Its surface (which may be made equal to that of the finest marble) NEVER THROWS OUT ANY SALT, and will receive paint in four days, without peeling, when put upon dry work.

It is peculiarly adapted as an internal stucco for walls, skirting, architraves, mouldings, and enrichments of all kinds, to all of which purposes it has been extensively applied by Mr. Thomas Cubitt, on the Grosvenor estate, &c.

For the above purposes, it possesses great advantages over woods being more economical and durable, resisting fire, damp, and vermin.

For the floors of halls and fire-proof warehouses, its lightness, durability, and uniform surface give it an immense advantage over stone, being, at the same time, much more economical. The most satisfactory references can be given. To be had of the Patentees, Plaster of Paris and Cement Manufacturers, 126, DRURY LANE.

Agent for Liverpool and Manchester, Mr. R. PART, 28, Canning-place, Liverpool.

TO ARCHITECTS, ENGINEERS, CONTRACTORS, BUILDERS, MASONS, AND PLASTERERS, MERCHANTS, SHIPPERS, AND THE PUBLIC IN GENERAL.

JOHN'S and CO.'S PATENT STUCCO CEMENT.—The following are the positive advantages possessed by this Invention over every Cement hitherto introduced:—It will effectually resist Damp. It will never vegetate, nor turn green, nor otherwise discolour. It will never crack, blister, nor peel off. It will form a complete Stone casing to any Building covered with it. It so closely resembles Stone that it is impossible to detect it. It never requires either to be painted or coloured. It will keep fresh and good in the cask, in any Climate, for any number of years. It is the only Cement that can be depended upon for export. It is the only Cement that can be used with confidence by the Sea-side. It may be used in the hottest or coldest Climates at any season. It will adhere to any substance, even to Wood, Iron, or Glass. It will carry a larger Proportion of Sand than any other Cement. It matures by age, and becomes perfect when other Cements begin to perish. It may be worked through the Winter, as frost has no effect upon it. It may be used on the Inner Walls of new Houses, which may be papered over or painted directly. Roofs laid or pointed with this Cement will remain undamaged by the severest Storms. Any Plasterer may apply it, the Instructions for use being very clear and distinct. The first cost of this material does not exceed that of the cheapest Cement now in use; but with all the above-named extraordinary and valuable advantages, nothing can approach it in point of economy.

Architects and Builders who have used this Cement have declared that it requires only to be known to be universally preferred.

Specimens may be seen, and a Prospectus fully describing the Cement, and its mode of application, together with a volume of Testimonials from every part of the Kingdom, may be obtained on application at the office of "The Builder," and of MANN and CO., SOLE AGENTS for the Patentees, 5, Maiden-lane, Queen-street, Cheapside, London; of whom also may be had.

JOHN'S and CO.'S PATENT STONE-COLOUR STUCCO PAINT, expressly intended for Painting over exterior Walls of Houses that have been covered with Roman or other Cements, and which have become dirty and discoloured. It is in every way better suited for this purpose than White Lead Paint, which will frequently come off in flakes, being in direct chemical opposition with Cement; whereas MESSRS. JOHN'S and CO.'S PATENT PAINT having an affinity for Stucco, binds itself with it, stopping the action, thereby rendering the wall proof against weather, and imparting a pure stone-like effect, procurable by no other Paint whatever. It is cheap in its application,—and may be used by any Painter, in any climate, even in the most exposed Marine situations.